

RCRA FACILITY INVESTIGATION  
LAND DISPOSAL AREAS  
VOLUME I OF III  
REPORT

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Birmingham, Alabama

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REPORT

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- B. Geophysical Investigation Report
- C. In-Situ Permeability Testing Data
- D. Survey Data
- E. Threatened and/or Endangered Species Correspondence

## GLOSSARY OF ABBREVIATIONS

AIHC	American Industrial Health Council
AP	Averaging Period
ASI	Analytical Services Incorporated
ASTM	American Society for Testing Materials
atoc	Above Top of Casing
ATSDR	Agency for Toxic Substance and Disease Registry
bls	Below Land Surface
BSC	Benzene Sulfonyl Chloride
BTF	Biological Treatment Facility
BW	Body Weight
CDC	Center for Disease Control
CFR	Code of Federal Regulation
cm/sec	Centimeters per Second
cm <sup>2</sup>	Square Centimeters
COC	Constituents of Concern
COEC	Constituents of Ecological Concern
CSF	Cancer Slope Factor
Cveg	Constituent Concentrations in Vegetation
DOT	Department of Transportation
ECG	Electrocardiogram
EEC	Expert Environmental Concentrations
EF	Exposure Frequency
EI	Ecological Inventory
ELCR	Excess Lifetime Cancer Risk
EP	Exposure Period
EPC	Exposure Point Concentration
ERA	Ecological Risk Assessment
ESD	Environmental Services Division
ESOD	Erythrocyte Superoxide Dismutase
FID	Flame Ionization Detector
FSP	Field Sampling Plan
ft	Feet
ft amsl	Feet Above Mean Sea Level
ft bls	Feet Below Land Surface
ft btoc	Feet Below Top of Casing
ft/ft	Feet per Foot
ft/sec	Feet per Second
ft/yr	Feet per Year
FWI	Facility-Wide Investigation
g	Gram
GI	Gastrointestinal
gpm	Gallons Per Minute

HDL	High Density Lipid
HEAST	Health Effects Assessment Summary Tables
HHC	Hillsborough Holding Corporation
HI	Hazard Index
HQ	Hazard Quotient
HSWA	Hazardous and Solid Waste Amendment
Hz	Hertz
I.D.	Inner Diameter
I.Q.	Intelligence Quotient
IDW	Investigation Derived Waste
IRIS	Integrated Risk Information System
JWC	Jim Walters Corporation
kg	Kilograms
Kg-day/mg	Kilogram-day per Milligram
K <sub>ow</sub>	Octanol-Water Partitioning Coefficient
L/day	Liters per Day
lb/ft <sup>3</sup>	Pounds per Cubic Foot
LD <sub>50</sub>	Lethal Dose
LOAELs	Lowest Observed Adverse Effect Levels
m <sup>3</sup> /ug	Cubic Meters per Microgram
MCL	Maximum Contaminant Level
mg	Milligrams
mg/cm <sup>2</sup>	Milligrams per Square Centimeter
mg/day	Milligrams per Day
mg/kg	Milligrams per Kilogram
mg/kg/day	Milligrams per Kilograms per Day
mg/L	Milligrams per Liter
mg/m <sup>3</sup>	Milligrams per Cubic Meter
mL	Milliliter
msl	Mean Sea Level
NOAELs	No Observed Adverse Effect Levels
O.D.	Outer Diameter
ORNL	Oak Ridge National Laboratory
OVM	Organic Vapor Monitor
PAH	Polycyclic Aromatic Hydrocarbon
PDF	Probability Density Function
PID	Photo Ionization Detector
PP	Priority Pollutant
PRGs	Preliminary Soil Remediation Goals
PU	Soil-to-Plant Uptake Factors
PVC	Polyvinyl Chloride
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
QC	Quality Controls
RAGS	Risk Assessment Guidance for Superfund

RBC	Risk-Based Concentration
RCRA	Resource Conservation Recovery Act
RFA	RCRA Facility Assessment
RfCs	Reference Concentrations
RfD	Reference Dose
RfDos	Reference Doses for Oral Exposure
RFI	RCRA Facility Investigation
RGOS	Remedial Goal Options
RME	Reasonable Maximum Exposure
SAR	Soil Adherence Rate
SD	Standard Deviation
Sloss	Sloss Industries Corporation
SQL	Sample Quantitation Limit
SSA	Skin Surface Area
SSSIC	Sloss Sheffield Steel and Iron Company
SVOC	Semivolatile Organic Compounds
SWMU	Solid Waste Management Unit
TC	Toxicity Characteristic
TCLP	Toxicity Characteristic Leaching Procedure
TEF	Toxicity Equivalency Factor
TSA	Toluene Sulfonic Acid
UCL	Upper Confidence Level
ug/day	Micrograms per Day
ug/dl	Micrograms per Deciliter
ug/g	Micrograms per Gram
ug/kg	Micrograms per Kilogram
ug/L	Micrograms per Liter
Ur <sub>i</sub>	Unit Risk Factor
USCS	Unified Soil Classification System
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
VSI	Visual Site Inspection
WHO	World Health Organization
Zn	Zinc

sludge material and assess the potential for these constituents to leach from the sludge. Soil sampling was conducted to confirm the presence or absence of soil contamination around the waste pile.

Area 3 - Landfill (SWMU 38) and Blast Furnace Emission Control Sludge Waste Pile (SWMU 39): The RFI investigation for SWMUs 38 and 39 consisted of the following tasks:

1. Seismic, conductivity, and resistivity geophysical surveys: The seismic survey was conducted to provide data on the depth to bedrock and the conductivity and resistivity surveys were conducted to identify areas with highly conductive materials in the soil and groundwater.
2. Sludge sampling: Sludge sampling was performed at SWMU 39 to evaluate the potential contaminants present in the sludge material and assess the potential for these constituents to leach from the sludge.
3. Installation of soil borings and soil sampling: Subsurface soil sampling was conducted to confirm the presence or absence of soil contamination at the monitor well locations.
4. Installation of 14 monitor wells: The monitor wells were installed to collect lithologic data, water level data, evaluate the hydraulic conductivity of the aquifer, and assess groundwater quality.
5. Hydraulic conductivity testing of the aquifer: Aquifer tests were conducted on each monitor well in order to determine hydraulic conductivities and groundwater flow velocities.
6. Groundwater sampling: Groundwater sampling was conducted to confirm the presence or absence of groundwater contamination at SWMUs 38 and 39.

Risk Assessment: Using data generated from the RFI, a health and environmental assessment was prepared to evaluate the risks associated with the Land Disposal Areas SWMUs.

## **1.0 INTRODUCTION**

Sloss Industry Corporation (Sloss) located in Jefferson County, Alabama, is evaluating past waste management practices in accordance with the regulations set forth by the Hazardous and Solid Waste Amendments (HSWA) of the Resource Conservation Recovery Act (RCRA) (Figure 1-1). In August 1990, ARCADIS Geraghty & Miller, Inc. was contracted by Sloss to prepare and implement a RCRA Facility Investigation (RFI) Work Plan for 39 solid waste management units (SWMUs) identified at the Sloss Facility during the RCRA Facility Assessment (RFA) (Figure 1-2). A RFI Work Plan was prepared and approved by the United States Environmental Protection Agency (USEPA) in May 1995. The Work Plan describes the investigations that will be conducted to characterize the nature, extent, and rate of contaminant migration from the SWMUs identified at the Facility.

In the RFI Work Plan, the SWMUs were separated into four separate areas: Coke Manufacturing Plant, Land Disposal Areas, Biological Treatment Facility (BTF) and Sewers, and Chemical Manufacturing Plant (Table 1-1 and Figure 1-2). These areas were created to group similar industrial activities together and allow for a systematic implementation of the investigation activities at each area. Initially, a Facility-Wide investigation (FWI) was completed in June through August 1995 to develop a conceptual hydrogeologic and hydrologic model of the Sloss Facility. The conceptual model details information on groundwater and surface water flow for use in assessing possible contaminant transport for future SWMU investigations. The RFI Facility-Wide Report was submitted to the USEPA in February 1996.

After completion of the RFI Facility-Wide Report, Sloss began focusing on the areas within the Facility as specified in the RFI Work Plan. Each of the four areas (Coke Manufacturing Plant, Land Disposal Areas, BTF and Sewers, and Chemical Manufacturing Plant) are being sequentially investigated and evaluated. The Coke Manufacturing Plant investigation was conducted in June 1996 and the RFI report for this

area was submitted to the USEPA in February 1997. The Land Disposal Areas investigation was conducted from June to August 1997. RFIs for the remaining SWMU areas will be implemented in 1998 (BTF and Sewers), and 1999 (Chemical Manufacturing Plant). This RFI Land Disposal Areas Report summarizes the results of the Land Disposal Areas investigation.

## **1.1 SITE BACKGROUND**

The Sloss Facility began operation in 1919 as Sloss Sheffield Steel and Iron Company (SSSIC) producing foundry and furnace coke and coke by-products. The Coke Manufacturing Plant consisted of five coke batteries which contained 240 coke ovens. Coke batteries 1 and 2, consisting of 120 coke ovens, were taken out of service in 1979. The coke product, produced through a process of carbonization, is sold primarily to the steel industry as furnace coke. The Coke Manufacturing Plant is currently operating and is located at the southwest part of the Sloss Facility (Figure 1-2).

In 1939, SSSIC merged with United States Pipe and Foundry Company and in 1948 the Facility constructed a Chemical Manufacturing Plant which produced Toluene Sulfonic Acid (TSA) 94. Sloss later expanded operations by manufacturing sulfones through a sulfonation process of sulfuric acid and benzenesulfonyl chloride (BSC). The Chemical Manufacturing Plant is located at the southeast part of the Sloss Facility and is currently operating (Figure 1-2).

A Mineral Wool Plant was constructed northeast of the Chemical Manufacturing Plant in 1950 and is currently operating (Figure 1-2). The plant manufactures mineral fibers which are used for ceiling tiles and insulating products.

In 1958, an iron blast furnace began operation at the Facility and produced pig iron from iron ore. The blast furnace ceased operation in 1979 and was removed in 1984.



Jim Walter Corporation (JWC) bought this Facility in 1960 and constructed a BTF located in the northern part of the Sloss Facility in 1973 (Figure 1-2). The BTF was designed to treat wastewater generated at the Facility. The wastewater that is generated enters a BTF Sewer System and is directed to the northeast part of the Facility where the BTF is currently operating. In 1988, the JWC sold controlling interest to Hillsborough Holding Corporation (HHC), and Sloss Industries Corporation became a wholly-owned subsidiary of HHC.

## **1.2 OBJECTIVES**

The objectives of the Land Disposal Areas RFI are to: (1) confirm the presence or absence of contamination at the site; (2) determine the extent and degree of contamination at the site; (3) identify and characterize the sources of contamination for the site; (4) assess the potential for contaminant migration to surrounding environments; (5) identify public health and environmental risks of any contaminants; and (6) define the scope of future investigations and/or actions at the site.

To meet the RFI objectives, each of the identified Land Disposal Areas SWMUs were evaluated to assess whether releases to the environment have occurred. The presence or absence of contamination was investigated at each Land Disposal Areas SWMU by collecting samples of potentially affected media (sludge, subsurface and surficial soil, and groundwater). Geophysical surveys (seismic, conductivity, and resistivity surveys) were performed around the perimeters of SWMU 23 and SWMUs 38 and 39 to provide data on the depth to bedrock and identify areas with highly conductive materials in the soil or groundwater. A risk assessment was prepared to identify public health and environmental risks of any contaminants. Additionally, data collected during the Land Disposal Areas RFI was also used to revise the conceptual site model which was developed during the FWI and subsequently modified with data collected during the Coke Manufacturing Plant investigation.

### 1.3 SCOPE

The land disposal operations at the Sloss Facility consists of three distinct areas (SWMU 23, SWMU 24, and SWMUs 38 and 39) for purposes of this investigation. These SWMUs are areas where materials generated from various on-site processes have been placed on the ground. SWMUs 38 and 39 are two adjacent units and are being evaluated as one unit hydrogeologically because of their close proximity.

Area 1 - Biological Sludge Disposal Area (SWMU 23): The RFI investigation for SWMU 23 consisted of the following tasks:

1. Seismic and conductivity geophysical surveys: The seismic survey was conducted to provide data on the depth to bedrock and the conductivity survey was conducted to identify areas with highly conductive materials in the soil and groundwater.
2. Sludge sampling: Sludge sampling was performed to evaluate the potential contaminants present in the sludge material and assess the potential for these constituents to leach from the sludge.
3. Installation of soil borings and soil sampling: Subsurface soil sampling was conducted to confirm the presence or absence of soil contamination at the monitor well locations.
4. Installation of six monitor wells: The monitor wells were installed to collect lithologic data, water level data, evaluate the hydraulic conductivity of the aquifer, and assess groundwater quality.
5. Hydraulic conductivity testing of the aquifer: Aquifer tests were conducted on each monitor well in order to determine hydraulic conductivities and groundwater flow velocities.
6. Groundwater sampling. Groundwater sampling was conducted to confirm the presence or absence of groundwater contamination at SWMU 23.

Area 2 - Blast Furnace Emission Control Sludge Waste Pile (SWMU 24): Sludge sampling was performed to evaluate the potential contaminants present in the

## **2.0 STUDY AREA**

### **2.1 TOPOGRAPHY**

Sloss is located in the Birmingham Valley District of the Alabama Valley and Ridge Physiographic section. The Birmingham Valley trends northeast-southwest and is characterized as essentially flat, low lying, and is bound to the southeast by Red Mountain and to the northwest by Sand Mountain (Figure 2-1).

Land surface elevations on the Sloss Facility range between 540 and 560 feet above mean sea level (ft amsl) except at the northwest portion of the Facility where Sand Mountain is exposed. Approximately 180 feet of relief is present from Sand Mountain to the Sloss Facility. Drainage from Sand Mountain trends southeast directing surface water toward the Sloss Facility (Figure 1-1).

### **2.2 SURFACE WATER**

The Sloss Facility lies in the Black Warrior River Basin. Two tributaries of the Locust Fork of the Black Warrior River occur in the vicinity of the Sloss Facility, Five Mile Creek located along the northern boundary of the Facility and Village Creek located approximately 1.5 miles south of the Facility. In the vicinity of the Sloss Facility, Five Mile Creek flows to the west and Village Creek flows to the southwest.

Surface water at the Sloss Facility is limited to a drainage ditch located along the eastern property boundary of the Sloss Facility. This drainage ditch is located north of SWMU 38 and extends from near monitor well MW-32 located adjacent to the LaFarge Quarry northward to Five Mile Creek where it discharges (Figure 2-2). Several drainage ditches which collect storm water runoff are also located adjacent to the Land Disposal Areas SWMUs. Storm water drainage ditches are located north and south of Summit Street which is located between SWMUs 38 and 39 and SWMU 24 and east of SWMU

24 along the driveway into the BTF. Additionally, a swale is located along the northern boundary of SWMU 24. SWMU 25, the Storm Water Runoff Sewer, which collects storm water and non-contact cooling water from the Sloss Facility, is located along the northwestern boundary of SWMUs 38 and 39 and approximately 50 feet west of SWMU 24. There are no surface-water bodies in the Land Disposal Areas SWMUs; however, SWMU 22, the Polishing Pond, which is a large surface impoundment, is located north of SWMU 24. Water from SWMU 25 drains into the polishing pond before permitted discharge to Five Mile Creek.

## **2.3 GEOLOGY**

### **2.3.1 Regional Setting**

The Sloss Facility is situated within the Valley and Ridge province at the southern end of the Appalachian Mountains (Figure 2-1). The Valley and Ridge province in the Birmingham area is underlain by more than 10,000 feet of sedimentary rock that range in age from Cambrian to Holocene. A generalized stratigraphic section of rocks in the area is presented in Figure 2-3. The Valley and Ridge Province is a structurally complex geologic feature that developed at the end of the Paleozoic Era in response to tectonic stresses during the deformation of the Appalachian fold mountain belt. Northwest trending faults and folds and thrust faults are typical of the Appalachian fold mountain belt. Structurally, the Valley and Ridge Province includes the Birmingham anticlinorium, Cahaba synclinorium, and the western edge of the Coosa synclinorium which are generally faulted and folded (Kidd and Shannon, 1977) (Figures 2-4 and 2-5). After development of the Valley and Ridge Province, the structures were subsequently modified by erosion.

The Birmingham anticlinorium is a major thrust faulted fold which trends northeast-southwest (Thomas and Bearce, 1986). The Sloss Facility is located on the Blount Mountain syncline which is the northwest limb of the Birmingham anticlinorium (Figure 2-5).

Several structural features are present on the Birmingham anticlinorium including the Opossum Valley thrust fault, which occurs in the area of the Sloss Facility, and the Jones Valley thrust fault (Figures 2-4 and 2-5). The Opossum Valley thrust fault is a northeast-southwest trending fault located on the northwestern limb of the Birmingham anticlinorium. It has a displacement of 7,000 feet or more where older carbonate rocks of the Conasauga Formation, Ketona Dolomite, and Knox Group have been thrust from the southeast over younger Paleozoic clastic rocks (Kidd and Richter, 1979). Numerous faults and fault splays are associated with the Opossum Valley fault, and formations immediately west of the fault are typically overturned, deformed, and faulted (Kidd and Richter, 1979).

### **2.3.2 Facility Geology**

The Sloss Facility is underlain by sedimentary rocks that range in age from Cambrian to Pennsylvanian as presented in Figure 2-6, a geologic map of the site. South of Summit Street, the Opossum Valley fault trace is located at the northwest perimeter of the Sloss Facility property. North of Summit Street in the BTF area, the Opossum Valley fault trace bisects the property in the area of the Polishing Pond (Figure 2-6). The hanging wall of the fault is located in the Sloss Facility plant area and the footwall of the fault is located on and adjacent to Sand Mountain (Figure 2-6).

Northwest of the Opossum Valley fault trace, on the footwall of the fault, the Sloss Facility including SWMU 23 is underlain by strata ranging from Silurian to Pennsylvanian in age (Figure 2-6). A fault slice of folded strata ranging in age from Silurian and older to Mississippian, which is part of an anticline structure, is present between the hanging wall and footwall of the Opossum Valley fault (Figure 2-6). The rocks exposed on Sand Mountain are inclined and dip to the southeast from 28° to 77°.

Southeast of the Opossum Valley fault trace, on the hanging wall of the fault, the Sloss Facility including SWMU 24 and SWMUs 38 and 39, is underlain by the Conasauga

Formation of Cambrian Age as presented in Figure 2-6. The rocks in the Conasauga Formation are inclined and dip to the southeast from 26° to 35°. A northeast-southwest geologic cross section of the Sloss Facility which bisects SWMU 24 and parallels the northwestern boundary of SWMUs 38 and 39 was constructed along the line indicated in Figure 2-2. The northeast-southwest cross section is presented in Figure 2-7.

The Conasauga Formation, which underlies the Land Disposal Areas, varies from 1,100 to 1,900 feet in thickness. In the area of the Opossum Valley fault, the stratigraphic thickness of the Conasauga Formation is probably much thinner than 1,100 to 1,900 feet. The Conasauga Formation consists of relatively few micrite zones, with larger proportions of very fine grained sparite and argillaceous sparite, and several zones containing somewhat dolomitic edgewise conglomerates (Brockman, 1978). The micrite tends to be light-gray, the sparite being darker in color, and the argillaceous rocks being darker than the purer limestone.

Lithologic data collected during the FWI indicates that the top two feet of the Conasauga Formation at most locations is composed of highly weathered limestone. Below the upper weathered surface of the Conasauga Formation, the limestone was generally massive with very few fractures. The blocks of limestone encountered during the FWI drilling were typically, medium gray in color and hard with thin (1- to 2-foot) lenses of softer, darker gray shale and shaley limestone; however, occasionally thin (2- to 12-inch) fracture zones were encountered. The limestone in these fracture zones was usually broken up and any remaining voids were infilled with calcite crystals. Areas of fractured limestone were generally within the upper 50 feet of the Conasauga Formation and became more infrequent with greater depth. Based on lithologic and geophysics data, the Conasauga Limestone at depth appears to be hard with little secondary porosity.

The underlying rocks of the Sloss Facility have been structurally deformed in response to thrust faulting, resulting in the development of an extensive network of faults and joints. The stress associated with the folding and faulting has created major joint

traces in the Conasauga Formation which trend northeast and northwest at the Sloss Facility. Two systematic sets of joints were found in quarries adjacent to the site, one set strikes approximately N45°E and dips approximately 60°NW and are approximately perpendicular to bedding and the second set strikes N30°W and has subvertical dips. Many of the joints of both sets are calcite healed, although some were observed to have reopened.

### **2.3.3 Bedrock Topography**

The bedrock topography of the Sloss Facility generally slopes to the north towards Five Mile Creek and top of bedrock elevation ranges from 574.2 ft amsl at the southwestern end of the site to 507 ft amsl near Five Mile Creek. In the Land Disposal SWMU Area, the bedrock elevations range from 517.8 to 625.7 ft amsl (Figure 2-8). Bedrock elevations in the area of SWMU 24 and SWMUs 38 and 39 range from 517.8 to 554.5 ft amsl and bedrock elevations on Sand Mountain (SWMU 23) range from 532.8 to 625.7 ft amsl. Depth to bedrock in the SWMU 24 and SWMUs 38 and 39 area is generally between 11 and 23 feet below land surface (ft bls) and the depth to bedrock on Sand Mountain ranges from 0 to 38 ft bls. Weathering of the Conasauga Formation has produced an undulating bedrock surface where several feet of relief has developed over tens of feet in some areas of the site (Figure 2-8).

## **2.4 SOILS**

### **2.4.1 Facility-Wide Soils**

Residual soil from weathered Conasauga Formation limestone overlies the majority of the Sloss Facility including the Land Disposal Areas; however, on and adjacent to Sand Mountain where SMWU 23 is located, residual soils have formed on the red Mountain Formation, the Ft. Payne Chert, the Tuscumbia Limestone, the Hartselle Sandstone, the Floyd Shale, and the Pottsville Formation (sandstone and shale) (Figure 2-6). According to

the Soil Survey of Jefferson County, Alabama (Spivey, 1982), soils on Sand Mountain consist of Tupelo silt loam and Allen-Urban land complex. Tupelo silt loam is nearly level to gently sloping, moderately well drained soil located on uplands of limestone valleys. The Allen-Urban land complex consists of strongly sloping, well drained Allen fine sandy loam and areas of Urban land located on mountain foot slopes and uplands of limestone valleys. Urban soils, where the original soil was altered by cutting and filling, shaping and grading, excavation, blasting, compacting, or covering with concrete or asphalt, occur on the remainder of the Facility. Where the original soil has not been disturbed, residual soil from weathered Conasauga limestone is present.

Lithologic data collected during the FWI indicates that in general, native soils at the Sloss Facility consist of cohesive, medium stiff to stiff inorganic clays of low to medium plasticity (CL) and high plasticity (CH) with color ranging from reddish brown to orangish yellow to very pale orange. General engineering properties based on analytical and visual observations of site soil properties include: high shrink-swell potential, low permeability, and low strength capabilities. Laboratory analysis of nine shelly tubes collected during the FWI identified the following ranges for geotechnical parameters which are consistent with the general engineering properties identified for site soils: coefficient of permeability  $1.9 \times 10^{-6}$  to  $5.4 \times 10^{-8}$  centimeters per second (cm/sec); wet and dry porosity 0.59 to 0.84 and 0.39 to 0.55, respectively; wet and dry density 112.8 to 129.2 pounds per cubic feet (lb/ft<sup>3</sup>) and 77.1 to 104.6 lb/ft<sup>3</sup>, respectively; and specific gravity 2.70 to 2.81. The low permeability of native soils will act as a barrier to mitigate the downward migration of any constituents of concern

Soil thickness at the Sloss Facility ranges between 0 and 38 feet thick. The soil at SWMUs 38 and 39 ranges between 11 and 23 feet thick. On Sand Mountain, surrounding SWMU 23 soil thickness ranges from 0 to 38 feet thick. The soil is thickest on Sand Mountain in the area of monitor well MW-23 (38 ft), and thinnest, along the railroad tracks near piezometer P-20 and on Sand Mountain near monitor well MW-22. As indicated above, some areas of the Sloss Facility have been altered as a result of construction of the



facility. Soils in the vicinity of SWMU 24 and SWMUs 38 and 39 have been replaced by non-native materials (eg. sludge, fill) in many locations.

#### **2.4.2 Background Soil**

Two areas located on Sand Mountain were selected as background soil boring locations in areas which appeared, according to historical aerial photographs, to be minimally disturbed by industrial activity. One area (SB-1, SB-2 and SB-3) was located south of Summit Street adjacent to power transmission lines where the grass is periodically maintained and the second area (SB-4, SB-5, SB-6) was located adjacent to the dirt road which trucks used to transport sludge to the Biological Sludge Disposal Area (SWMU 23) (Figure 2-8).

Background soil samples SB-1, SB-2, and SB-3 collected south of Summit Street consisted of a stiff, reddish-brown to yellowish-orange, clay (CH-CL) with minor black to yellowish orange mottling. Background soil samples SB-4, SB-5, and SB-6, collected upgradient of SWMU 23, consisted of a soft to stiff, yellowish-orange, clay to sandy clay (CL) with minor red mottling and chert fragments. A light brown, silty sand was encountered in the upper four feet of SB-4.

Background soil samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), Priority Pollutant (PP) metals, barium, and cyanide to evaluate background soil quality at the Sloss Facility. Analytical results are presented in Table 2-1. Trace concentrations of VOCs including methylene chloride, tetrachloroethene, toluene, 1,1,2-trichloroethene, and trichloroethene were detected in background soil borings at concentrations well below the USEPA Region III Industrial Risk-Based Concentrations (RBCs) for soil ingestion (USEPA, 1997a). These low concentrations of VOCs may be a result of vehicular traffic, industrial emissions, and weed maintenance. Tetrachloroethene, which degrades to trichloroethene, is used as a solvent and in soil sterilization, weed killers and insecticides.

Low concentrations of polycyclic aromatic hydrocarbons (PAHs) were detected in background soil borings at concentrations below USEPA Industrial RBCs for soil ingestion (Table 2-1). Additionally, bis(2-ethylhexyl)phthalate and di-n-butylphthalate were detected at concentrations below the USEPA Industrial RBCs for soil ingestion.

Concentrations of arsenic, beryllium, barium, chromium, copper, lead, nickel, thallium, zinc and mercury were detected in the background soil samples. Only arsenic and beryllium were detected at concentrations exceeding USEPA Industrial RBCs for soil ingestion (Table 2-1). The reported concentrations however are within the observed common range for trace elements in natural soils (USEPA, 1983).

## **2.5 HYDROGEOLOGY**

### **2.5.1 Regional Hydrogeology**

Most of the industrial and domestic water supply in the Birmingham area is provided by surface water sources. Groundwater resources in the Birmingham Valley are used to a limited degree for industry, manufacturing and ore extraction, and some municipal supply. Hydrogeologic units in the area which supply groundwater include the Conasauga Formation, the Ketona Dolomite, and the Knox Group, although younger Paleozoics are reported to be capable of producing sufficient quantities of water (Moffet and Moser, 1978).

The Conasauga Formation is a source of large quantities of water for wells and springs in some areas; however, the availability of water in the formation is not uniform because zones of increased porosity and permeability are concentrated along solution channels (Hunter and Moser, 1990). Recorded water production data reports yields up to 300 gallons per minute (gpm) for industrial wells and up to 3,400 gpm for springs in the Birmingham Valley. The well and spring (Tannehill Spring) with maximum reported yields are located approximately 3 and 26 miles, respectively, southwest of Sloss. In

contrast, reported yields of wells completed in the vicinity of Tannehill Spring on the southwest edge of Jefferson County vary from having significantly more water than is normally required for one household to nonproducing (Moffet and Moser, 1978).

The porosity and permeability of the Conasauga Formation generally decreases with depth and most of the groundwater is contained within the upper 300 feet of the formation (Hunter and Moser, 1990). The water table in areas underlain by the Conasauga Formation is typically 5 to 30 ft bls.

The Ketona Dolomite may be also be a productive aquifer in areas where bedrock weathering has created secondary solution features, however, water-level and production data for this aquifer are lacking. The Copper Ridge member of the Knox Group is a productive aquifer with reported yields of 145 to 820 gpm in wells and up to 3,900 gpm in springs. Water levels in the Copper Ridge aquifer range from 20 to 75 ft bls.

There is no data regarding the vertical or horizontal hydraulic relationship between aquifers. Although the Conasauga Formation, Ketona Formation, and the Copper Ridge member of the Knob Group have been recognized as good aquifers, data regarding their aquifer characteristics in the area are lacking.

### **2.5.2 Facility Hydrology**

The principal lithologic units underlying most of the Sloss Facility, including Land Disposal Areas SWMU 24 and SWMUs 38 and 39, are the overburden and the Conasauga Limestone (Figure 2-6). Based upon data collected during the FWI, groundwater flow in the Conasauga Formation is controlled by the occurrence and relationships between fractures, joints, and bedding of the limestone and the shale of the Conasauga Formation. Piezometer data collected during the Facility-Wide RFI indicate three potential water bearing zones occur in the Conasauga Formation: (1) the upper bedrock surface (top two to three feet) which is composed of highly weathered broken,

limestone; (2) calcite filled fracture zones within the limestone ranging from approximately 40 to 140 ft bls; and (3) shaly zones below approximately 140 ft bls.

Several other hydrogeologic units underlie a small portion of the Facility on and adjacent to Sand Mountain in the Land Disposal Areas SWMU 23 area and the BTF area (Figure 2-6). On Sand Mountain, in the SWMU 23 area, water bearing zones are present in the Tuscumbia Limestone and in sandstone lenses within the Parkwood Formation (Figure 2-3).

The highest producing water bearing zones in the Conasauga Formation were encountered in the upper, weathered bedrock between 40 and 140 ft bls. Below 140 ft bls, the Conasauga Formation appears to be composed of massive beds of low permeability limestone with occasional relatively more permeable shaley zones and very few fractures. Water bearing zones below 140 ft bls for the most part have produced piezometers with low yields and slow groundwater recovery.

Although three water bearing zones exist in the Conasauga Formation, current water level data and the absence of a confining unit between zones suggests that the three zones are hydraulically connected. Additionally, water level data indicates the upper highly weathered limestone surface appears hydraulically connected to the overlying soil in many areas. Monthly water level data was collected from initiation of the FWI (August 1995) until December 1996 to assess the hydraulic connection between the shallow and deep (below 140 ft bls) Conasauga Formation. Based on an evaluation of the monthly water level data, it was determined that quarterly water level data would be adequate to assess the hydraulic connection between the shallow and deep Conasauga Formation. Quarterly water level data was collected beginning in January 1997.

During the Land Disposal Areas investigation, water levels were measured in all bedrock piezometers and monitor wells on August 17, 1997 (Table 2-2). Water level elevations in bedrock piezometers and monitor wells screened in permeable bedrock units

shallower than 140 ft bls ranged from 506.02 ft amsl at P-1D to 603.90 ft amsl at MW-23 (Figure 2-9). Water level elevations in piezometers and monitor wells screened within the deep Conasauga Formation (depths greater than 140 ft bls), excluding MW-34D, ranged from 405.68 ft amsl at P-9 to 503.05 ft amsl at P-20 (Table 2-2 and Figure 2-10). The water level elevation in monitor well MW-34D is similar to water level elevations in the shallower piezometers and monitor wells.

Deep Conasauga Formation piezometers P-9, P-13D, and P-21 and monitor wells MW-26 and MW-34D bailed dry during well development and MW-26 and MW-34D also bailed dry during purging before groundwater sampling. Although monitor well MW-34D bailed dry during development, the water level in this monitor well recovered shortly after the well was developed and has a water level similar to piezometers and monitor wells set in the upper part of the Conasauga Formation. This suggests a hydraulic connection at this location between the three lithologic units described previously. Water levels in deep piezometers P-13D, P-20, and P-21, and monitor well MW-26 have recovered from 50 to 100 feet since development in August 1995 and indicate the deep zone is generally in hydraulic connection with the shallow, more permeable zone of the Conasauga Formation. Water levels in piezometer P-9, however, have not recovered since development and indicate some portions of the less permeable Conasauga Formation are not connected with the more permeable shallow zone and little to no groundwater flow may occur in these areas.

The shallow potentiometric map for August 1997 indicates that the groundwater flow direction in the upper Conasauga Formation beneath the Sloss Facility is generally to the northeast toward Five Mile Creek, a discharge area for the upper Conasauga Formation (Figure 2-9). Because of the change in topography on Sand Mountain north of Summit Street, the groundwater flow from Sand Mountain, which is a recharge area, is to the east toward the Polishing Pond. The deep potentiometric map for August 1997 indicates that the groundwater flow direction in the deep Conasauga is northeast in the Coke Manufacturing Plant area and to the south in the Land Disposal Areas (Figure 2-10).

The hydraulic conductivity in the Conasauga Formation aquifer system is variable, depending in part on the occurrence of interconnected fractures and weathered limestone zones. Values for hydraulic conductivity in the Conasauga Formation typically have an order of magnitude of  $10^{-4}$  cm/sec (geometric mean), though values range from  $7 \times 10^{-2}$  (MW-29) to  $4 \times 10^{-8}$  cm/sec (P-4). Values for hydraulic conductivity in the Conasauga Formation in the area of the Land Disposal Areas SWMUs range from  $7 \times 10^{-2}$  (MW-29) to  $4 \times 10^{-8}$  cm/sec (MW-35) (Table 2-3).

The rate of groundwater flow in the bedrock aquifer varies locally with permeability and hydraulic gradient. In the southwestern section of the Facility, a relatively flat potentiometric surface with a hydraulic gradient of 0.010 feet per foot (ft/ft). In the central and northeastern portions of the Facility where the topography dips gently to the north, the hydraulic gradient is 0.025 ft/ft. Along the northwestern boundary of the Facility where Sand Mountain rises steeply a hydraulic gradient of 0.10 ft/ft was calculated. Groundwater flow velocities in the shallow Conasauga Formation, calculated from slug test results, hydraulic gradients, and aquifer properties generated during the FWI and Land Disposal Areas Investigation, may range from 0.07 feet per year (ft/yr) to 9,000 ft/yr.

## **2.6 LAND DISPOSAL AREAS (SWMUS 23, 24, 38, AND 39)**

### **2.6.1 Biological Sludge Disposal Area (SWMU 23)**

#### **2.6.1.1 Description of History and Current Conditions**

The Biological Sludge Disposal Area (SWMU 23) is located at the northwest part of the Sloss Facility on Sand Mountain (Figure 1-2). Sludge from the BTF Dewatering Machine (SWMU 20) and the Chemical Manufacturing Plant Benzenesulfonyl Chloride Wastewater Neutralization System (SWMU 34) was disposed on this two-acre site that is

bounded by soil dikes. The unit began receiving waste in 1975 and received approximately 12 tons of sludge a day until April 1990 when the neutralization process which generated the sludge at SWMU 34 was discontinued. The unit continued receiving approximately 10 tons of biological sludge a day from the BTF until 1993 when all disposal in this unit was discontinued. While in operation, the unit was covered approximately once every 45 days. Currently the sludge generated at the BTF is transported to Beltona where it is used as a soil amendment in previously mined areas.

#### **2.6.1.2 Previous Investigations**

In February 1986, USEPA reportedly collected sludge samples from the BTF dewatering machine (filter press) which was the major source of sludge disposed in SWMU 23 (USEPA, 1989a). The analytical results indicated the following constituents and concentrations:

<u>Constituent</u>	<u>Concentration</u>
Arsenic	130 milligrams per kilogram (mg/kg)
Chromium	120 mg/kg
Cyanide	20 mg/kg
Lead	130 mg/kg
SVOCs	42,000,000 micrograms per kilogram (ug/kg)
VOCs	12,000 ug/kg

The RFA report recommended that a RFI should be conducted to evaluate the impact of the unit on groundwater, surface-water, soil, and air quality.

## **2.6.2 Blast Furnace Emission Control Sludge Waste Pile (SWMUs 24 and 39)**

### **2.6.2.1 Description of History and Current Conditions**

There are two Blast Furnace Emission Control Sludge Waste Piles located at the Sloss Facility. The piles contain dusky brown granular material that was generated during the production of pig iron from 1958 to 1979. The sludge that was produced at the Blast Furnace Plant was transported to a waste pile adjacent to SWMU 39 or the BTF (Figure 1-2). The material was formerly a listed USEPA Hazardous Waste (Code F016) because of its cyanide content but was removed from 40 Code of Federal Regulation (CFR) 261 by the November 12, 1980 Federal Register (Volume 45, No. 220).

The waste pile at SWMU 24 occupies several acres adjacent to the BTF. The material is currently being removed from SWMU 24 and being sold as product. As a result of mining the waste pile at SWMU 24, the footprint of this SWMU has increased. The waste pile at SWMU 39 is a northeast-southwest trending ridge that is adjacent to SWMU 38. Both SWMUs are partially vegetated and lack liners or runoff/runon controls.

### **2.6.2.2 Previous Investigations**

In February 1986, the Environmental Service Division (ESD) of the USEPA collected sludge samples from SWMU 24 as part of a waste stream investigation. Analytical reports indicated that several metals and cyanide were detected. Chromium, lead, and zinc had the highest concentrations. During the site investigation, ESD reported that surface water drains off SWMU 24 and flows into SWMU 22.



### **2.6.3 Landfill (SWMU 38)**

#### **2.6.3.1 Description of History and Current Conditions**

The Landfill is located at the north-central part of the Sloss Facility, adjacent to the Blast Furnace Waste Pile (SWMU 39). The pile is a northeast-southwest trending ridge, approximately 60 feet high, which began operation in the 1920s. Debris identified at the Landfill include concrete rubble, conveyor belts, wood, construction material, empty 55-gallon drums, flue dust, and coal. The landfill is still used for disposal of uncontaminated concrete, brick, block, and soil from excavation activities. The landfill was subjected to a metals recovery operation over the last two years.

#### **2.6.3.2 Previous Investigations**

In October 1980, an evaluation of the Landfill was conducted by the Environmental Division of the Geological Survey of Alabama. The evaluation identified the disposed material as mineral fiber slag, tar trap residue, decanter tank tar, flue dust, and construction debris. The evaluation recommended disposal practices should cease and continue at a new location.

The 1989 RFA reported that the unit was not capped and had no containment controls. The USEPA recommended that monitor wells be installed and groundwater samples should be collected to determine groundwater quality.

### **3.0 DESCRIPTION OF INVESTIGATIVE TASKS**

#### **3.1 SURFICIAL SOIL SAMPLING**

A total of fifteen (15) surficial soil samples were collected around the perimeter of SWMU 24 at sample locations 24-SL0002 through 24-SL0016. Surficial soil sample locations at SWMU 24 are shown on Figure 3-1 and the location names and sample identification numbers are summarized in Table 3-1. The purpose of the soil sampling and analysis was to determine if site soil has been impacted by the SWMU 24 sludge. Although sixteen (16) surficial soil samples were proposed in the RFI Work Plan, the number of sampling locations was reduced based on site conditions identified during the field reconnaissance. Soil was not present at or adjacent to the proposed 24-SL0001 location, only sludge was present, therefore this sampling location was eliminated from the sampling program. Copies of the surficial soil sampling logs are included in Appendix A.1. A sample designation explanation is provided in Volume III, Analytical Data, of the RFI Land Disposal Areas Report.

Surficial soil sampling was conducted in accordance with the procedures specified in the Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP). Samples were collected via a stainless steel hand auger after clearing the ground surface of the sludge material. The stainless steel hand auger was advanced to one foot below the top of the soil. To prevent volatilization, samples for volatile organic analysis were immediately placed in four-ounce jars and put in a cooler containing ice. Samples collected for all other analysis were mixed in a stainless steel mixing bowl using a stainless steel spoon. The soil was scraped from the sides and rolled to the middle of the bowl and initially mixed. The sample was then quartered and each quarter was mixed individually. The quarters were recombined into the center of the bowl and mixed one final time. The sample was then spooned into four-ounce glass jars with Teflon<sup>TM</sup> lined caps. The sample containers were placed in a cooler containing ice.

Duplicates, equipment blanks and field blanks were collected according to the frequency and procedures specified in the site QAPP. Duplicate samples were collected by transferring soil from the stainless steel bowl into the duplicate and field sample containers in equal portions until the containers were full. The duplicate samples collected at SWMU 24 are presented in Table 3-1. The sampling equipment was decontaminated in accordance with the site-specific QAPP.

The soil samples were preserved with ice and relinquished either to a courier for delivery or delivered by G&M sampling personnel to Analytical Services Incorporated (ASI). Soil samples were analyzed for USEPA Method 8270B (SVOCs) and USEPA Method 8260A (VOCs), the thirteen PP metals, barium, and cyanide. Analytical reports for the soil samples are presented in Volume III, Analytical Data, of the RFI Land Disposal Areas Report. After completion of the sampling and analysis program, the field and analytical data were reviewed and validated according to procedures outlined in the site QAPP. The checklists completed during the data validation are included in Volume III, Analytical Data, of the RFI Land Disposal Areas Report.

### **3.2 SLUDGE SAMPLING**

Sludge samples from SWMUs 23, 24, and 39 were collected from June 16 to 19, 1997. The sludge sample location names and sample identification numbers are summarized on Table 3-2. Sludge samples were collected at four (4) locations at SWMU 23 (23-SM0001 through 23-SM0004) and at SWMU 24 (24-SM0001 through 24-SM0004). The sludge sample locations for SWMUs 23 and 24 are shown on Figures 3-2 and 3-1, respectively. Sludge samples were collected at six (6) locations (39-SM0001 through 39-SM0006) at SWMU 39. However, as specified in the work plan, only four of the sludge samples collected from SWMU 39 were analyzed by ASI. The locations of the four sludge samples (39-SM0002, 39-SM0003, 39-SM0005, and 39-SM0006) analyzed by ASI are shown on Figure 3-3. Copies of the sludge sampling logs are included in

Appendix A.2. A sample designation explanation is provided in Volume III, Analytical Data, of the RFI Land Disposal Areas Report.

Sludge sampling was conducted in accordance with the procedures specified in the FSP and QAPP. Samples were collected by scooping sludge from select areas of the waste piles using a stainless steel spoon after removing weathered material at surface. To prevent volatilization, samples for volatile organic analysis were immediately placed in four-ounce jars and put in a cooler containing ice. Samples collected for all other analysis were mixed in a stainless steel mixing bowl using a stainless steel spoon. Sample mixing followed procedures discussed in Section 3.1. The sample was then spooned into four-ounce and one-liter, wide-mouth glass jars with Teflon<sup>TM</sup> lined caps. The sample containers were placed in a cooler containing ice.

Duplicates, equipment blanks and field blanks were collected according to the frequency and procedures specified in the site QAPP. Duplicate samples were collected by transferring sludge from the stainless steel bowl into the duplicate and field sample containers in equal portions until the containers were full. The duplicate samples collected are presented in Table 3-2. The sampling equipment was decontaminated in accordance with the site-specific QAPP.

The sludge samples were preserved with ice and relinquished either to a courier for delivery or delivered by G&M sampling personnel to ASI. Sludge samples were analyzed for USEPA Method 8270B (SVOCs) and USEPA Method 8260A (VOCs), the thirteen PP metals, barium, cyanide, and Toxicity Characteristic Leaching Procedure (TCLP) constituents. Analytical reports for the sludge samples are presented in Volume III, Analytical Data, of the RFI Land Disposal Areas Report. After completion of the sampling and analysis program, the field and analytical data were reviewed and validated according to procedures outlined in the site QAPP. The checklists completed during the data validation are included in Volume III, Analytical Data, of the RFI Land Disposal Areas Report.

### 3.3 GEOPHYSICAL INVESTIGATION

The RFI Work Plan proposed collection of seismic and terrain conductivity surveys data around the SWMU 23 and SWMUs 38 and 39; however, changes to the geophysical survey were proposed in a letter to the USEPA dated May 12, 1997. Proposed changes included elimination of the seismic survey during the Land Disposal Areas investigation because seismic survey and geologic mapping data generated during the FWI provided adequate bedrock topography data. Seismic data collected during the FWI pertinent to SWMU 23 and SWMUs 38 and 39 are presented in this report.

The letter also proposed that grounded resistivity measurements be taken on the western side of SWMUs 38 and 39 to minimize the effect of the railroad tracks and cars on the results. During the field investigation, additional changes based on field conditions included collection of EM-31 data around SWMU 23 and SWMUs 38 and 39 to provide geophysical data to 18 ft bls and collection of ground resistivity data around SWMUs 38 and 39 to minimize the effect of buried and overhead powerlines and overhead and buried pipelines. Proper electrode spacing for ground resistivity readings were determined in the field by the Senior Field Geophysicist using two Schlumberger soundings.

#### 3.3.1 Perimeter Conductivity and Resistivity Surveys

Perimeter conductivity and/or resistivity surveys around SWMU 23 and SWMUs 38 and 39 were conducted from July 7 to July 14, 1997 at the Sloss Facility to locate anomalous areas of relatively high conductivities in soil and groundwater. Geophysical and geologic data were used to determine if anomalous conductive regions were derived from landfill materials (*i.e.* leachate). EM-31 and EM-34 readings were collected around SWMU 23 at 5 and 25 foot spacings, respectively, and the geophysical investigation line is shown on Figure 3-2. EM-31 and ground resistivity readings were collected around SWMUs 38

and 39 at 5 and 25 foot spacings, respectively, and the geophysical investigation line is shown on Figure 3-3.

Labeled pin flags were placed along the geophysical investigation lines. These lines were later surveyed and the coordinates used to present the conductivity and resistivity data. The conductivity and resistivity data interpretation process are discussed in Appendix B.

### **3.3.2 Seismic Survey**

A perimeter seismic survey was conducted around the Sloss Facility from June 5 to June 20, 1995 during the FWI to provide a preliminary identification of the bedrock surface and to develop a conceptual hydrogeologic model. A total of 47 seismic spreads were placed around the perimeter of the Sloss Facility at the locations presented in Figure 3-4. Seismic data was collected along the eastern boundary of SWMU 23 (seismic lines S40 and S41) and along the eastern and western boundary of SWMUs 38 and 39 (seismic lines S5, S6, S26 through S29, S34, and S35).

A Strata View™ 48 channel seismic recorder manufactured by Geometrics of California was used for the survey. Vertical component geophones with a natural frequency of 40 hertz (Hz) were used to sense seismic vibrations. The spacing between the geophones was 5 feet, giving a spread length of 235 feet. This spread length did not allow for continuous site coverage of the Sloss Facility perimeter which was proposed in the RFI Work Plan; however, it was the Senior Field Geophysicist's assessment that the new density of data would provide a good statistical evaluation of the bedrock topography of the site.

A 15 pound sledge hammer was used as an energy source by hitting a metal base plate placed on the ground surface. By stacking the results from several hammer blows on the base plate at each shot location, this setup produced good quality seismic data.

Shots were placed at the ends of the seismic spread along with three shots placed approximately equally spaced within the spread. On some of the spreads, shots were also placed 50 feet beyond the ends of the spread. However, in all cases, depths and velocities are interpreted only from within the spread length.

At each of the shot locations a labeled pin flag was placed. These shot points were later surveyed and the coordinates used to present the seismic data. Further details on the seismic survey and data interpretation process are discussed in Section 2.7 and Appendix E of the RFI Facility-Wide Report.

### **3.4 SUBSURFACE SOIL SAMPLING**

Subsurface soil samples were collected at Land Disposal Areas SWMU 23 and SWMUs 38 and 39 at the locations of the monitor wells. Soil samples were collected during installation of new monitor wells MW-21, MW-29, MW-33, MW-35, MW-37 in August 1997. Chemical analysis was not performed on soils from monitor well MW-31 because soil was not present above the bedrock surface.

As proposed in a letter to USEPA dated May 12, 1997, several piezometers installed during the FWI, which coincided with proposed monitor well locations for SWMU 23 and SWMUs 38 and 39, were converted to monitor wells (Table 2-2). The FWI piezometers were constructed in accordance with the monitor well specifications presented in the RFI Work Plan. At monitor wells MW-22 through MW-28, MW-30, MW-32, MW-34, and MW-36 soil borings were drilled adjacent to the existing monitor wells to collect subsurface soil samples (Table 3-3). Lithologic data collected during installation of these monitor wells in 1995 was used to select the subsurface sample intervals for laboratory analysis. Chemical analysis was not performed on soils from the soil boring adjacent to MW-32 because soil was not present above the bedrock surface.

A total of 29 soil samples were collected at 15 monitor well locations for chemical analysis (Table 3-3). Sample collection and laboratory analyses were conducted in accordance with the procedures and methods described in the site FSP and QAPP. The soil samples were field screened to determine the concentration of volatile organic vapors, using an Organic Vapor Monitor (OVM) equipped with a Photo Ionization Detector (PID). A sample designation explanation is provided in Volume III, Analytical Data, of the RFI Land Disposal Areas Report.

Detailed soil sample logs were prepared for each subsurface soil sample using the Unified Soil Classification System (USCS). Copies of the subsurface soil sampling logs are presented in Appendix A.3. The drilling and sampling equipment were decontaminated in accordance with the site QAPP.

Subsurface soil samples were collected using a truck mounted hollow stem auger drill rig. Continuous formation samples were collected from boreholes for monitor wells MW-21, MW-29, MW-31, MW-33, MW-35, MW-37 at 2-foot intervals using split spoon samplers in accordance with American Society Testing Materials (ASTM) Method D-1586. At the locations where piezometers were converted to monitor wells, soil borings were drilled adjacent to the existing monitor wells and the split spoon sampling intervals were selected using depth requirements specified in the RFI Work Plan and existing lithologic data. The standard split spoon used was two inches in diameter and two feet in length, providing a discrete sample of the two-foot interval. The split spoon was attached to the end of the drilling rod and driven into the soil the length of the sampler. After reaching the desired depth, the split spoon was withdrawn from the borehole, detached from the drilling rod, and opened. The upper portion of the split spoon was discarded.

At each borehole, subsurface samples were collected for chemical analysis in the middle of the soil column ( $1/2$  the distance between the surface and the top of bedrock) and just above the top of bedrock surface. In some boreholes, fill or sludge materials comprised a significant portion of the material above the top of bedrock surface and soil samples for



chemical analyses were not collected from one or both of the proposed collection depths. If the soil thickness was less than five feet, one sample was collected just above the bedrock surface. Similarly, if the soil thickness was less than one-half foot, soil samples for chemical analyses were not collected due to the inability to acquire sufficient sample volume using the split spoon sampler (MW-31 and MW-32).

To prevent volatilization, soil from each sample interval was collected for VOC analysis by transferring the soil directly from the sampling instrument to the appropriate sample container immediately after the split spoon was opened. The VOC samples were then placed in a cooler with ice. The remaining soil was mixed for semivolatile and metals analysis. Sample mixing followed procedures discussed in Section 3.1. After the mixing was complete, the sample was then spooned into wide-mouth glass jars with Teflon™ lined caps.

Some of the soil samples had a high clay content. In clayey soils, mixing the samples according to the standard procedures was not possible. In these cases, the sample was placed in the bowl and finely subdivided with a stainless-steel spoon. Representative portions of the subdivided sample were then distributed to appropriate sample containers.

Duplicates, equipment blanks and field blanks were collected according to the frequency and procedures specified in the site QAPP. Duplicate soil samples for semivolatile and metals analysis were collected by transferring soil from the stainless steel bowl into the appropriate containers in equal portions until the containers were full. In clayey soils, each duplicate container was filled with equally representative soil portions. Duplicate samples collected are presented in Table 3-3.

Soil samples were preserved with ice and relinquished to a courier for overnight delivery service to ASI in Atlanta, Georgia for USEPA Method 8260A (VOCs), USEPA Method 8270B (SVOCs), the thirteen PP metals, barium, and cyanide analysis.

Drill cuttings generated at SWMUs 23, 38 and 39 soil sample locations were containerized in Department of Transportation (DOT)-approved 55 gallon drums, labeled, and stored in a central staging area. Soil results were used to characterize investigation derived waste (IDW) soil, except at MW-31 and MW-32 where soil samples were not collected. At these locations, samples of drummed soil cuttings were collected and analyzed for USEPA Method 8260A, USEPA Method 8270B, PP metals, barium, and cyanide. Characterization of the IDW soil and disposal recommendations are presented in Volume II, Investigation Derived Waste Report, of the Land Disposal Areas RFI Report. Boreholes which were not converted to monitor wells, were abandoned by filling the bore hole with a 3% bentonite mixture neat cement grout.

Analytical reports for the soil samples and IDW samples are presented in Volume III, Analytical Data, of the RFI Land Disposal Areas Report. After completion of the sampling and analysis program, the field and analytical data were reviewed and validated according to the procedures outlined in the site QAPP. The checklists completed during the data validation are included in Volume III, Analytical Data, of the RFI Land Disposal Areas Report.

The intervals sampled at each location, and the methodology used to select the sample intervals is discussed below in SWMU specific sections.

#### **3.4.1 SWMU 23**

Subsurface soil samples were collected from the five monitor well locations at SWMU 23 (Table 3-3, Figure 3-2). Soil samples were collected at the location of newly installed monitor well MW-21 and previously installed monitor wells MW-22, MW-23, MW-24 and MW-25S/MW-25D. The proposed locations of monitor wells MW-22, MW-23, MW-24, and MW-25S/MW25D coincided with FWI piezometers P-31, P-30, P-29, and P-28S/P-28D, respectively, and these piezometers have been converted into monitor wells. Soil borings 23-SBMW22, 23-SBMW23, 23-SBMW24, and 23-SBMW25, respectively,

were drilled adjacent to the existing monitor wells to collect subsurface soil samples (Table 3-3).

Subsurface soil samples were collected at mid-depth and just above the bedrock surface at the borehole for monitor well MW-21 and from soil borings 23-SBMW23 and 23-SBMW24. The location names, sample identification numbers, and sample intervals for the subsurface soil samples are presented in Table 3-3. Only one subsurface soil sample, 970806-LD-23-SL00022(0-2), was collected from a soil boring 23-SBMW22 since the bedrock surface was observed at 2 ft bls during installation of this well. A single soil sample, 970805-LD-23-SL0025(19-21), was collected just above the bedrock surface in soil boring 23-SBMW25 due to the presence of a significant thickness of sludge and lime used for stabilization of biological sludge at this location.

#### **3.4.2 SWMUs 38 and 39**

Subsurface soil samples were collected from ten of the 12 monitor well locations at SWMUs 38 and 39 (Figure 3-3). In the vicinity of SWMU 38, soil samples were collected from six monitor well locations. Soil samples were collected at the location of newly installed monitor wells MW-29 and MW-37 and previously installed monitor wells MW-26, MW-27, MW-28, and MW-30S/MW-30D. Soil samples could not be collected at newly installed monitor well MW-31 since less than one-half foot of native soil was present at this location. The proposed locations of monitor wells MW-26, MW-27, MW-28, and MW-30S/MW30D coincided with the locations of FWI piezometers P-27, P-26, P-25, and P-24S/P-24D, respectively, and these piezometers have been converted into monitor wells (Table 2-2). Soil borings 38-SBMW26, 38-SBMW27, 38-SBMW28, and 38-SBMW30, respectively, were drilled adjacent to the existing monitor wells to collect subsurface soil samples (Table 3-3).

Subsurface soil samples were collected at mid-depth and just above the bedrock surface from the boreholes for newly installed monitor wells MW-29 and MW-37 and from

soil borings 38-SBMW26, 38-SBMW27, 38-SBMW28, and 38-SBMW30. The location names, sample identification numbers, and sample intervals for the subsurface soil samples are presented in Table 3-3. Soil sample 970808-LD-38-SL0027(22-24) was collected from a second borehole installed adjacent to monitor well MW-27 to replace the 970805-LD-38-SL-0027(22-24) VOC sample which was broken during shipment.

In the SWMU 39 area, subsurface soil samples were collected from four locations (Table 3-3, Figure 3-2). Soil samples were collected at the location of newly installed monitor wells MW-33 and MW-35 and previously installed monitor wells MW-34S/MW-34D and MW-36. Since soil was not present above the bedrock surface at previously installed monitor wells MW-32, soil samples were not collected. The proposed locations of monitor wells MW-32, MW-34S/MW-34D, and MW-36 coincided with the locations of FWI piezometers P-7, P-6S/P-6D, and P-5, respectively, and these piezometers have been converted into monitor wells (Table 2-2). Soil borings 39-SBMW32, 39-SBMW34 and 39-SBMW36 were installed adjacent to these monitor wells to collect the subsurface soil data.

Only one soil sample was collected from the boreholes for monitor wells MW-33 and MW-35 and from soil boring 39-SBMW34 since less than 5 feet of native soil material was present above the bedrock surface at each location. Subsurface soil samples were collected at mid-depth and just above the bedrock surface from soil boring 39-SBMW36. The location names, sample identification numbers, and sample intervals for the subsurface soil samples are presented in Table 3-3. Soil sample 9708008-LD-39-SL0034(10-12) was collected from a second borehole installed between existing monitor wells MW-34S and MW-34D for collection of soil samples to replace the 970805-LD-38-SL-0034(10-12) VOC sample which was broken during shipment.

### **3.5 MONITOR WELL INSTALLATION**

At SWMU 23, the approved RFI Work Plan indicated a total of 8 monitor wells would be installed; however, six monitor wells were installed. Since five of the proposed

monitor well locations coincided with FWI piezometer locations and the piezometers were constructed in accordance with monitor well construction specifications detailed in the work plan, these five piezometers are being utilized as monitor wells. At SWMU 23, piezometers P-28S, P-28D, P-29, P-30, and P-31 were converted to monitor wells MW-25S, MW-25D, MW-24, MW-23, and MW-22, respectively. New monitor well MW-21 was installed in 1997 during the Land Disposal Areas RFI. Proposed monitor well MW-20 was not installed because SWMU 23 does not extend as far down Sand Mountain as originally depicted in the work plan. Additionally, the proposed deep monitor well at the MW-23 location was eliminated because a deeper monitor well was not warranted since MW-23 is 78.5 ft deep. These modifications to the scope of work were proposed in a letter dated May 12, 1997 to the USEPA.

At SWMUs 38 and 39, the approved RFI Work Plan indicated a total of 12 monitor wells would be installed; however, 14 wells were installed. Since seven of the proposed monitor well locations coincided with FWI piezometer locations and the piezometers were constructed in accordance with monitor well construction specifications detailed in the work plan, these seven piezometers are being utilized as monitor wells. At SWMUs 38 and 39, piezometers P-5, P-6S, P-6D, P-7, P-27, P-26, P-25, P-24S, and P-24D were converted to monitor wells MW-36, MW-34S, MW-34D, MW-32, MW-26, MW-27, MW-28, MW-30S, and MW-30D, respectively (Table 2-2). Although monitor well couplets were not proposed in the work plan at MW-34 and MW-30, piezometer couplets had been installed at these locations during the FWI and the deeper wells (MW-34D and MW-30D) in the couplet are being utilized in the SWMUs 38 and 39 investigation. Five new shallow bedrock monitor wells MW-29, MW-31, MW-33, MW-35, and MW-37 were installed during the 1997 Land Disposal Areas investigation.

### **3.5.1 Installation Methods**

The monitor wells which were installed during the Land Disposal Areas RFI and monitor wells which were initially installed as FWI piezometers were installed in the first water bearing zone encountered during drilling. Information from the monitor wells will assist in characterizing the site geology, hydraulic gradients, groundwater flow rates, flow direction, and groundwater quality in the Land Disposal Areas SWMUs. Construction details for the monitor wells in the Land Disposal Areas are included in Table 2-2. Both the monitor wells which were installed during the Land Disposal Areas RFI and monitor wells which were initially installed as FWI piezometers were installed using the following procedures.

Two drill rigs and two different methods of drilling were utilized to drill the boreholes for the monitor wells. First, a hollow stem auger drill rig was used for drilling in the unconsolidated residuum and collecting split spoon samples. After the auger rig encountered bedrock or auger refusal, down-hole percussion hammer drilling was used to complete the monitor well borehole in bedrock. A decontamination pad for decontamination of drilling equipment was constructed using visquene on a bermed, concrete pad near the Chemical Manufacturing Plant. All drilling and sampling equipment was decontaminated in accordance with the QAPP.

The hollow stem auger drill rig, using 3.25 inner diameter (I.D.) augers, was used to drill a nominal 7.25 inch pilot hole through the overburden sediments to auger refusal. At the monitor well locations, 2-foot split spoon formation samples were collected continuously from the land surface to the top of bedrock. The split spoon sampling was performed in accordance with ASTM Method D-1586. After the split spoon was opened, the samples were field screened to determine the concentration of volatile organic vapors, using an OVM equipped with a PID. The physical characteristics of the samples obtained were described in detailed soil boring logs using the USCS. Copies of the soil boring

logs for the newly installed and the monitor wells installed during the FWI are provided in Appendix A.4. After the soil was characterized, soil samples were archived in labeled, air-tight glass containers.

During the hollow stem auger drilling, the subsurface conditions at each location were evaluated to determine if a surface casing was needed. If a possible source of contamination was suspected to be near the monitor well, a 6-inch diameter steel surface casing was installed through the overburden into the bedrock surface. If a surface casing was required, the existing 7.25-inch borehole was reamed to be a nominal 10-inch diameter borehole using the air rotary method of drilling. Air was used as the circulating media during drilling to clear the borehole of cuttings. The air from the compressor on the rig was filtered using in-line and external filters to prevent oil from the compressor from being introduced into the borehole. A small volume of potable water was occasionally used during drilling to assist in the removal of drill cuttings. The borehole was advanced approximately two feet into the bedrock surface, however, if the bedrock surface was highly fractured or weathered, the borehole was advanced until more competent rock was encountered.

After removal of the drill bit, a 6-inch steel surface casing was installed to the total depth of the borehole. Permanent 6-inch surface casing was installed at monitor wells MW-31, MW-33, MW-35, and MW-37 installed during the Land Disposal Areas investigation and MW-25S, MW-25D, MW-26, MW-27, MW-32, MW-34S, and MW-34D and MW-36 installed during the FWI. The annular space was then sealed with neat cement grout by pressure grouting with a tremie pipe from the bottom of the hole to land surface. The cement grout consisted of a mixture of Portland Type I cement (ASTM Method C-150) and water in a proportion that did not exceed seven gallons of potable water per bag of cement (94 pounds). Additionally, 3 percent by weight of bentonite was added to the grout to prevent shrinking and to control the heat of hydration during grouting.

If there were no adjacent sources of possible contamination, but the overburden was unstable allowing for possible cave-in during drilling, a temporary 6-inch steel surface casing was installed. A nominal 9-inch borehole was advanced through the overburden using the air rotary method of drilling. The borehole was drilled approximately 2 feet into the bedrock surface, or until competent bedrock was encountered. After the drill bit was removed, a 6-inch steel surface casing was installed to the total depth of the borehole. A bentonite seal, approximately 2- to 3-feet thick, was placed around the bottom of the surface casing where it was seated in the bedrock. The annular space at the land surface was sealed off with visquene to prevent rock cuttings from falling into the annular space during drilling. The remaining annular space was left open. A temporary surface casing was installed at monitor well MW-29 during the Land Disposal Areas investigation and MW-24S, MW-24D, and MW-28 during the FWI. Following completion of the well, the temporary surface casing was removed.

After allowing the surface casing grout to set or bentonite in the case of a temporary surface casing, a nominal 6-inch diameter borehole was drilled inside the surface casing by down-hole percussion hammer drilling. Air was used as the circulating media during drilling to clear the borehole of cuttings. The screened intervals of the monitor wells were selected so that completed monitor wells would provide representative hydrologic information for the water bearing zone. The boreholes were advanced in bedrock until the drill cuttings were damp or wet and the borehole appeared to produce sufficient water for a monitor well.

The bedrock monitor wells were constructed using 10 feet of new, 2-inch-diameter, factory slotted, 0.010-inch slot polyvinyl chloride (PVC) screen with schedule 40, threaded, flush joint, PVC casing extending to land surface. A schematic diagram of a typical bedrock monitor well is shown in Figure 3-5. The PVC casings conformed to the requirements of ASTM Method D-1785 and carried the seal of the National Sanitation Foundation. A section of closed end, schedule 40 PVC casing was attached to the bottom



of each screen to provide a sump for sediments. Each monitor well was fitted with a vented PVC cap.

The annular space between the borehole and the screen was filled with 20/30 graded silica sand from the bottom of the borehole to approximately 2 feet above the top of the well screen, either by gravity feeding the sand from the surface, or by using the tremie method.

A nominal 2-foot thick bentonite seal was placed above the filter pack in each piezometer to prevent the downward migration of cement grout. The seal, consisting of tamped bentonite pellets, was installed by gravity feeding from the surface and allowed to hydrate for a minimum of one hour. The remaining annular space above the bentonite was sealed by pressure grouting with neat cement grout through a tremie pipe to land surface. The cement grout consisted of a mixture of Portland Type I cement (ASTM Method C-150) and water in a proportion that did not exceed seven gallons of clean water per bag of cement (94 pound). Additionally, 3 percent by weight of bentonite powder was added to the grout to prevent shrinking and control the heat of hydration during grouting.

The boreholes were drilled as near to plumb as possible to assist in proper casing alignment, and placement of the sand pack and cement seal. The plumbness of each monitor well was checked by running a 6 ft length of 1.75-inch outer diameter (O.D.) PVC attached to clean polyethylene rope to the bottom of the monitor well. Monitor well casing plumbness was checked before and after grouting the annular space.

Drill cuttings from each borehole were containerized in DOT-approved 55-gallon drums and labeled with the well number, date, and site. In August 1997, IDW rock cuttings from monitor wells installed during the Land Disposal Areas investigation were sampled and analyzed for USEPA Method 8260A, USEPA Method 8270B, the thirteen PP metals, barium, and cyanide. Analytical reports for the IDW samples and the

checklists completed during the data validation are presented in Volume III, Analytical Data, of the RFI Land Disposal Areas Report. Characterization of the IDW and recommendations for disposal are presented in Volume II, Investigation Derived Waste Report, of the RFI Land Disposal Areas Report. IDW drill cuttings from the monitor wells installed during the FWI were characterized in the RFI Facility-Wide Report.

Precautions were used during the drilling and monitor well construction to prevent the entry of foreign material into the well. Monitor well casings were set to extend to two to three ft above grade, and surrounded by a 4-inch diameter protective steel casing set into a concrete pad. The protective steel casings have locking caps. Each concrete pad has nominal dimensions of 3 ft x 3 ft x 4-inches and slopes away from the monitor well. A permanent metal plate was installed in each concrete pad and stamped with the monitor well identification number. In areas where monitor wells could possibly be damaged by vehicular traffic, 4-inch diameter steel protective posts were placed equally spaced around the monitor well. The number of protective posts used ranged from two to four posts. At one location (MW-33), six 6-inch steel posts were installed around the monitor well due to a high probability of the monitor well being damaged by heavy machinery. When installed, the protective posts were concreted into the ground to a depth of approximately two ft bls, and then the posts were filled with concrete.

The Geraghty & Miller representative prepared detailed monitor well construction and sample core logs for each monitor well. Copies of the field logs for the monitor wells installed during the Land Disposal Areas investigation and the FWI are included in Appendix A.5.

### **3.5.2 Well Development**

After completion of each monitor well, but no sooner than 48 hours after grouting was completed, monitor well development was conducted. The monitor wells were developed by pumping and/or bailing. No acids or dispersing agents were used in any

monitor well. Development continued until the pH, conductivity, and turbidity of the groundwater had stabilized, or until it was determined that further development would not provide any significant improvement in turbidity. The well yield for monitor wells MW-26, MW-34D, and MW-35, were too low to permit continuous pumping or bailing. This monitor well was initially pumped dry and allowed to recharge for 24 hours. After 24 hours, the volume of water in the monitor well casing was considered one recharge volume and the monitor well was repeatedly bailed dry until five recharge volumes were removed. Monitor well development logs are presented in Appendix A.6.

Development water was containerized in DOT-approved 55-gallon drums and labeled with the monitor well identification number, site location and date. Groundwater sampling results will be used to characterize IDW development water. Characterization of the IDW development water and disposal recommendations are presented in Volume II, Investigation Derived Waste Report, of the RFI Land Disposal Areas Report.

### **3.6 IN-SITU PERMEABILITY TESTING**

In-situ permeability tests were performed on each of the installed monitor wells to determine the hydraulic conductivity of the formation around the screened portion of each well. In-situ permeability tests were conducted on the monitor wells installed during the Land Disposal Areas investigation in August 1997 and the monitor wells installed during the FWI in August 1995. The tests were performed by rapidly lowering a sealed, closed end, water filled PVC pipe (slug) into each monitor well, instantaneously displacing the water column from its initial static level. The water level in each monitor well was measured to 0.01-foot accuracy with a pressure transducer and an In-Situ Model SE 1000B Hermit data logger. The initial phase of the test is known as a falling head slug test. After the water level had equilibrated, less than 0.01 ft change over at least six minutes, the slug was quickly removed causing the water column to instantly fall and then begin to rise towards its static level. The falling head and rising head versus time data were analyzed to determine the hydraulic conductivity at each monitor well tests.

The accumulated data were transferred to an IBM Compatible PC from the data logger. Microsoft Excel™ software was used to organize, print, and graph the raw data.

The hydraulic conductivity was calculated using ARCADIS Geraghty & Miller, Inc. AQTESOLV™ software which solves for hydraulic conductivity using the method presented by Bouwer and Rice (1976). In general, data from the water-level displacement during the initial phase of infiltration and recovery were given a higher weight due to minimal sandpack effects, and the best-fit line was found for data points from the beginning of the test which represent steady-state recovery. Monitor well slug test logs and evaluations are presented in Appendix C for the new and previously installed monitor wells.

### **3.7 WATER LEVEL MEASUREMENTS**

Water level measurements were collected on August 17, 1997 at all site piezometer locations and monitor wells in the Land Disposal Areas SWMUs using an electronic water rule (Appendix A.7). Table 2-2 summarizes water level data collected in August 1997. Additionally, surface water levels were measured at the staff gages in Five Mile Creek and the drainage ditch in August. The water level at staff gage SG-3 was not measured because it could not be located on August 17, 1997. The data obtained on August 17, 1997 was used to construct groundwater contour maps which were used to estimate flow patterns and gradients over the site. The electronic water rule was decontaminated prior to use at each piezometer and monitor well according to the procedures specified in the site QAPP.

### **3.8 GROUNDWATER SAMPLING**

A total of twenty (20) monitor wells (MW-21 through MW-37) were sampled at SWMUs 23, 38, and 39. The purpose of the groundwater sampling and analysis was to determine if groundwater has been impacted by site activities. Copies of the groundwater

sampling logs are included in Appendix A.8. A sample designation explanation is provided in Volume III, Analytical Data, of the RFI Land Disposal Areas Report.

Groundwater sampling was conducted in accordance with the procedures specified in the FSP and QAPP which are summarized below. After taking water level and total depth measurements using an electronic water rule at each well, the volume of water in the wells and the purge volume were calculated. The well was purged using a 2-inch submersible pump with the pump intake approximately 10 feet into the water column. As drawdown increased, the pump was lowered to prevent exposure of the intake. In this manner, stagnant water was removed from the well casing from the top to the bottom. If no appreciable drawdown was observed, the pump was not lowered and fresh formation water was allowed to be drawn up the casing to the intake point by the pump.

The 2-inch submersible pump is equipped with a check valve which prevents purged water in the discharge hose from draining out of the pump during removal of the pump from the well or while the pump is shut off. Pumping rates of one gallon per minute or less were used to purge wells to minimize the amount of sediment entrained in the water column induced by purging activities.

Three to five well volumes were purged from each monitor well using the 2-inch submersible pump unless the well went dry. Monitor wells MW-26, MW-34D, and MW-35 pumped dry after approximately one well volume and were sampled less than 24 hours later after they had recovered enough to collect the required samples. Less than 5 well volumes were purged only when pH, conductivity, temperature, dissolved oxygen, and turbidity readings stabilized in less than 5 well volumes.

Field parameters (pH, conductivity, temperature, dissolved oxygen, and turbidity) were measured during purging and immediately before collecting groundwater samples

from each monitor wells sampled (Table 3-4). Field instruments were calibrated according to the frequency and procedures specified in the site QAPP.

After 5 well volumes had been purged or field parameters stabilized groundwater samples were collected through the 2-inch submersible pump for USEPA Method 8270B (SVOCs), the thirteen PP metals, barium, and cyanide. After non-volatile samples had been collected, the 2-inch submersible pump was removed from the well. Groundwater samples for USEPA Method 8260A (VOCs) were collected from the center of the screened interval using a Teflon™ bailer attached to a Teflon™ coated stainless steel. The VOC samples were collected using the procedures detailed in the site QAPP to minimize aeration of the sample.

Monitor wells that pumped dry (MW-26, MW-34D, and MW-35) were sampled for USEPA Method 8260A, USEPA Method 8270B, the thirteen PP metals, barium, and cyanide from the center of the screened interval using a Teflon™ bailer attached to a Teflon™ coated stainless steel cable. Groundwater samples for USEPA Method 8260A were collected first using the procedures detailed in the site QAPP to minimize aeration of the sample. Samples for USEPA Method 8270B, the thirteen PP metals, barium, and cyanide were collected using the Teflon™ bailer after collection of the USEPA Method 8260A samples.

After collection, sample containers were placed in a cooler containing ice. Duplicate samples were collected by filling containers with equal aliquots of groundwater. Equipment blank, field blank, and duplicate samples were collected according to the frequency and procedures specified in the site QAPP. All sampling equipment was decontaminated in accordance with the QAPP.

The groundwater samples were preserved with ice and relinquished to a courier for delivery to ASI. Analytical reports for the groundwater samples are presented in Volume III, Analytical Data, of the RFI Land Disposal Areas Report. After completion

of the sampling and analysis program, the field and analytical data were reviewed and validated according to procedures outlined in the site QAPP. The checklists completed during the data validation are included in Volume III, Analytical Data, of the RFI Land Disposal Areas Report.

Purge water was containerized in DOT-approved 55-gallon drums and labeled with the monitor well identification number, site location, and date. If development water drums at each monitor well location were not completely filled, purge water generated during the groundwater sampling event was placed in the development water drums. Purge water from different monitor wells was not mixed. Groundwater sampling results were used to characterize the IDW purge water. Characterization of the IDW purge water and disposal recommendations are presented in Volume II, Investigation Derived Waste Report, of the RFI Land Disposal Areas Report.

### **3.9 SITE SURVEY**

Abrams Aerial Survey Corporation prepared a site topographic map for the Sloss Industries Corporation Facility during preparation of the RFI Work Plan. During the FWI, information was obtained from Abrams Aerial Survey Corporation on the survey control used during preparation of the base map so that the site surveys for all RFIs could be tied to the existing site map. This site map was used as the base map for the Land Disposal Areas investigation. All surveying completed for the Land Disposal Areas investigation was conducted by a State-certified land surveyor.

In June to August 1997, surficial soil and sludge sample locations, geophysical survey lines, and newly installed monitor well locations were surveyed vertically to mean sea level and tied horizontally to the site base map. Land Disposal Areas survey data is presented in Appendix D and surface elevations for the monitor wells are presented on Table 2-2.

#### **4.0 DESCRIPTION OF INVESTIGATIVE TASKS**

During the Land Disposal Areas Investigation, several investigative approaches were utilized in evaluating whether a release had occurred in the past. A geophysical conductivity and/or resistivity survey of the perimeter of SWMU 23 and SWMUs 38 and 39 was performed to locate areas with relatively high conductivities in soil and groundwater which may be a result of migration of contaminants from the SWMUs as leachate. Seismic data collected during the FWI around the perimeter of SWMU 23 and SWMUs 38 and 39 was used to provide data on the depth to bedrock.

The chemical properties of the sludge associated with the Land Disposal Areas SWMUs were investigated to evaluate the potential contaminants present in the sludge. The chemical properties of the surficial and/or subsurface soils and groundwater were investigated to confirm the presence or absence of contamination at these SWMUs. Sludge, surficial and/or subsurface soils, and groundwater samples were analyzed for VOCs (USEPA Method 8260A), SVOCs (USEPA Method 8270B), the thirteen PP metals, barium, and cyanide. Sludge samples were also analyzed for TCLP constituents.

Total VOCs, SVOCs, PP metals, barium, and cyanide data were collected to assess the chemical properties of the sludge samples. The sludge samples were evaluated based on comparison of the TCLP results to RCRA Toxicity Characteristic (TC) levels to assess the potential for chemical constituents present in the sludge to leach into the soil and groundwater.

Soil concentrations were evaluated based upon a comparison to USEPA Region III RBCs for soil ingestion in an industrial setting as presented in the Region III USEPA Risk-Based Concentration Table dated October 22, 1997 (Table 4-1). The industrial RBCs for soil ingestion were used as a screening tool to identify if a potential risk exists. A risk assessment was then conducted to evaluate actual risk which may exist. RBCs are chemical concentrations corresponding to fixed levels of risk (i.e., hazard quotient of 1,



or a lifetime cancer risk of  $10^{-6}$ , whichever occurs at a lower concentration). The RBCs were developed by taking toxicity constants (reference doses and carcinogenic potency slopes) and combining these constants with “standard” exposure scenarios. Since an industrial RBC for soil ingestion is not available for lead, the *de facto* residential RBC was used. Industrial RBCs for soil ingestion were not available for several compounds detected including acenaphthylene, benzo(g,h,i)perylene, and phenanthrene (Table 4-1).

Groundwater concentrations were evaluated based upon a comparison to USEPA Maximum Contaminant Levels (MCLs) or Region III RBCs for tap water if an MCL was not available for a constituent. The MCLs or RBCs for tap water were used as a screening tool to identify if a potential risk exists. A risk assessment was then conducted to evaluate actual risk which may exist

Based upon a review of data collected at Land Disposal Areas SWMUs, concentrations of metals detected were below USEPA Industrial RBCs except for arsenic and beryllium. Because concentrations of arsenic and beryllium are naturally high in site soils, site background soil results for these metals were used during the data evaluation (Tables 2-1 and 4-1).

## **4.1 BIOLOGICAL SLUDGE DISPOSAL AREA (SWMU 23)**

### **4.1.1 Site Specific Geology**

SWMU 23 is located on Sand Mountain on the fault slice mapped during the FWI. The fault slice is located between the hanging wall and the footwall of the Opossum Valley Fault. The geology and structural features discussed below are depicted on Figures 2-6 and 4-1. From the base of Sand Mountain to the crest, the Mississippian age Hartselle Sandstone and Tuscumbia Limestone, Silurian age Red Mountain Formation, Mississippian age Fort Payne Chert, and the Pennsylvanian age Pottsville Formation are exposed at the surface, or interpreted to be present although they are covered (Figures 2-6

and 4-1). The formations present on Sand Mountain in the SWMU 23 area dip to the southeast on the eastern slope of the mountain and are overturned on the crest (Figure 2-6). Measured dips range from 32° (southeast) to 80° (overturned) moving up Sand Mountain to the west. The large variations in dip of the rocks on Sand Mountain and overturned beds are the result of complex folding and faulting along the Opossum Valley fault.

The Opossum Valley fault trace is inferred to be present at the contact between the Cambrian age Conasauga Formation and the Hartselle Formation located at the base of the mountain (Figures 2-6, 2-8, and 4-1). The fault slice trace, which is located approximately 500 ft west of SWMU 23, is interpreted to be present at the contact between the Fort Payne Chert and the Pottsville Formation. The fault slice is interpreted to be an anticlinal structure, plunging to the northeast, which was torn from the Birmingham Anticlinorium and faulted stratigraphically downward. The axis of the anticlinal structure of the fault slice trends northeast and is located in the Red Mountain Formation in the vicinity of SWMU 23 (Figure 2-6).

Monitor wells MW-21, MW-25S, and MW-25D were screened in fractured, micritic limestone, interpreted to be within water-bearing portions of the Conasauga Formation, just east of the Opossum Valley Fault. Monitor wells MW-23 and MW-24 were screened in sandstone and shale, interpreted to be within the mapped fault slice in water-bearing portions of the Pennsylvanian Parkwood Formation. Monitor well MW-22 was screened in slightly fractured limestone interpreted to be within the mapped fault slice in water-bearing portions of the Tuscumbia Limestone.

The soil overburden consists primarily of clay (CH to CL) with areas of cherty clay. Thickness of the soil overburden ranges from 0 to 38 feet. The soil overburden is thickest near monitor well MW-23 and thinnest at MW-22. The increased soil thickness in the vicinity of MW-23 is a result of weathering of the relatively less competent chert of

the Fort Payne Chert formation. Significant non-native material, related to plant activities, was present overlying soils at monitor wells MW-25S and MW-25D.

#### **4.1.2 Site Specific Hydrogeology**

Lithologic samples, geophysical analysis, water-level measurements, and the results of the in-situ permeability testing were used to develop an understanding of the hydrogeology at SWMU 23.

##### **4.1.2.1 Geophysical Evaluation**

The geophysical evaluation included the FWI seismic survey conducted in 1995 and the conductivity survey conducted in July 1997. The FWI seismic survey report is presented in Appendix E of the RFI Facility-Wide Report and the Geophysical Investigation Report which presents the results of the conductivity survey is presented in Appendix B of this report.

###### **4.1.2.1.1 Facility-Wide Seismic Investigation**

Perimeter seismic data collected during the FWI detected three velocity zones at the site indicating differences in rock materials underlying the Sloss Facility. The three velocities were interpreted to consist of the following: (1) residual soil, (2) the weathered upper bedrock surface, and (3) hard rock with little secondary porosity.

Areas on Sand Mountain (S40 and S41 located west of SWMU 23) are underlain by three layers. The residual soil has velocities of about 2,000 ft/sec (feet/second) (Figure 3-4). The intermediate layer or weathered bedrock, where it exists, has a velocity usually somewhat less than 6,000 ft/sec. The hard bedrock, which was interpreted to have little secondary porosity, has average velocities exceeding 15,000 ft/sec. The higher velocity

layer on Sand Mountain shows more variation in bedrock velocity and often have velocities less than 8,000 ft/sec. The lower velocities present on Sand Mountain are within the observed range of shale (6,000 to 10,000 ft/sec).

On Sand Mountain, both deep and shallow depths are observed for the high velocity bedrock. Depths range from approximately 10 feet to over 40 feet. Depths to bedrock of over 40 feet are encountered on spread S40 and indicates undulating weathering of the bedrock surface on Sand Mountain has occurred and often several feet of relief is developed over tens of feet.

#### 4.1.2.1.2 Conductivity Survey

EM-31 and EM-34 conductivity survey lines are shown on Figure 3-2 and the Geophysical Investigation report is included as Appendix B. EM-31 and EM-34 readings were taken every 5 and 25 feet, respectively, and penetrated 18 and 50 ft bls, respectively. A total of four anomalous areas of high conductivity, labeled A, B, C, and D on Figures 1 and 2 of Appendix B, were observed in the EM-31 and EM-34 data.

Anomaly A was observed in the EM-31 and EM-34 data. Anomalies C and D, which occur in the same general region, were observed in the EM-31 and EM-34 data, respectively. Maximum observed conductivities at anomalies A, C, and D were approximately 30 millimho/m, which is slightly higher than average observed shallow and deep conductivities (less than 20 and less than 15 millimho/m, respectively). Anomalies A, C, and D occur in an area where shale and iron-rich sandstone of the Red Mountain Formation has been observed to outcrop and are approximately coincident with observed bedding planes. Shales are often conductive due to their bedding structure and high porosity.

Anomaly B is a well-defined feature and was only observed in the shallow EM-31 data. The well-defined nature of Anomaly B indicates it may be a result of increased soil

thickness or increased bedrock porosity due to fracturing in the vicinity of the anomaly. Increased conductivities which result from the presence of conductive fluids (e.g. leachate) in the subsurface are generally more extensive features than observed at Anomaly B.

#### **4.1.2.2 Hydrogeology**

In the vicinity of SWMU 23, the observed groundwater elevations range from 535.24 (MW-22) to 603.90 (MW-23) ft amsl (Table 2-2 and Figure 2-9). The direction of groundwater flow is to the east toward the base of Sand Mountain.

Hydraulic conductivities calculated from slug tests conducted on monitor wells surrounding SWMU 23 range from  $6 \times 10^{-6}$  cm/sec (MW-25D) to  $3 \times 10^{-3}$  cm/sec (MW-22) (Table 4-2). Relatively high conductivities in the Tuscumbia Limestone at monitor well MW-22 may be responsible for decreased observed water table elevations. The average horizontal hydraulic gradient in the vicinity of SWMU 23 is 0.100 ft/ft. This average hydraulic gradient was used to calculate groundwater flow velocities, using an assumed porosity of 0.20 for formation materials. Calculated groundwater flow velocities at SWMU 23 range from 3 ft/year (MW-25D) to 1000 ft/year (MW-22).

#### **4.1.3 Sludge Sampling**

Five (5) sludge samples (including 1 duplicate sample) were collected from four locations at SWMU 23 and analyzed for VOCs, SVOCs, PP Metals, barium, cyanide, and TCLP constituents (Table 3-2 and Figure 3-2).

#### **4.1.3.1 Sludge Description**

Sludge samples collected from SWMU 23 were black to moderate brown in color and were composed of clay/silt sized material (Appendix A.2). All sludge samples from SWMU 23 were moist to saturated and had a septic odor.

#### **4.1.3.2 Chemical Characteristics**

##### **4.1.3.2.1 Total Volatile Organic Compounds**

Five VOCs including 2-butanone, acetone, ethylbenzene, toluene, and xylenes were detected in sludge samples collected at SWMU 23 (Table 4-3).

##### **4.1.3.2.2 Total Semivolatile Organic Compounds**

Fifteen PAHs and 4-methylphenol (p-cresol) were detected in sludge samples collected at SWMU 23 (Table 4-3). Total PAH concentrations ranged from 55,600 to 357,100 ug/kg.

##### **4.1.3.2.3 Total Metals and Cyanide**

Cyanide and ten of the thirteen PP metals were detected in sludge samples collected at SWMU 23 (Table 4-3).

#### 4.1.3.2.4 TCLP Analyses

TCLP VOCs, SVOCs, organochlorine pesticides, and chlorinated herbicides were not detected in sludge samples collected at SWMU 23 (Table 4-4). Two TCLP metals, barium and chromium, were detected in the sludge samples (Table 4-4). Barium was detected in all of the sludge samples and concentrations ranged from 3.5 to 18 milligrams per liter (mg/L). These concentrations were well below the RCRA TC level of 100 mg/L. Chromium was detected in two of four sludge samples at concentrations of 0.12 and 0.18 mg/L which were below the RCRA TC level of 5 mg/L.

#### 4.1.4 Subsurface Soil Sampling

Nine (9) subsurface soil samples (including one duplicate sample) were collected at the five (5) monitor well locations around the perimeter of SWMU 23 and analyzed for VOCs, SVOCs, PP metals, barium, and cyanide (Table 3-3 and Figure 3-2).

##### 4.1.4.1 Soil Description

Soils from SWMU 23 were composed primarily of light brown, stiff to plastic clay (CL to CH) with minor amounts of chert and sandstone fragments (Appendix A.3). Saturated soil conditions were not encountered until directly above the bedrock surface. No odor was detected in the soil samples and OVM readings were below detection limits in all samples.

#### **4.1.4.2 Chemical Characteristics**

##### **4.1.4.2.1 Total Volatile Organic Compounds**

Acetone was detected in one soil sample, 970805-LD-23-SL0025(19-21), collected from SWMU 23 (Table 4-5). The detected acetone concentration was well below the USEPA Industrial RBC of 200,000,000 ug/kg. Acetone is typically a result of lab or field decontamination procedures.

##### **4.1.4.2.2 Total Semivolatile Organic Compounds**

SVOCs were not detected in subsurface soil samples collected at SWMU 23 (Table 4-5).

##### **4.1.4.2.3 Total Metals and Cyanide**

Cyanide and nine of the 13 PP metals were detected in soil samples collected from SWMU 23 (Table 4-5). The concentration of lead detected was below the USEPA Residential RBC. Detected barium, beryllium, cadmium, chromium, copper, lead, nickel, zinc, and cyanide concentrations were below USEPA Industrial RBC concentrations.

Arsenic was detected above the USEPA Industrial RBC of 3.8 mg/kg in soil samples 970806-LD-23-SL0022(0-2), 970806-LD-23-SL0023(24-26), 970805-LD-23-SL0024(7-9), and 970805-LD-23-SL0024(14-16) at 4.6, 6.3, 13, and 30 mg/kg, respectively. Only soil sample, 970805-LD-23-SL0024(14-16), was outside the arsenic range observed in background soil samples (1.9 to 21 mg/kg) collected as part of the FWI (Table 4-1). The presence of arsenic in the background soil samples and the fact that arsenic was not detected in TCLP sludge samples suggests this metal is not derived from the sludge material. Furthermore, this soil sample location is upgradient of SWMU 23



and the arsenic concentration in the 7 to 9 ft bls soil sample collected at the same location had a lower arsenic concentration (13 mg/kg).

#### **4.1.5 Groundwater Quality**

At SWMU 23, seven (7) groundwater samples (including one duplicate sample) were collected at monitor wells MW-21, MW-22, MW-23, MW-24, MW-25S, and MW-25D, and analyzed for VOCs, SVOCs, PP metals, barium, and cyanide (Figure 3-2). Field analyses conducted during groundwater sampling are summarized on Table 3-4.

##### **4.1.5.1 Volatile Organic Compounds**

Acetone was detected in groundwater sample 970818-LD-23-GW0022 collected from monitor well MW-22 (110 micrograms per liter [ug/L]); however, acetone was not detected in the soil sample collected at MW-22 (Tables 4-5 and 4-6). The detected acetone concentration was well below the USEPA RBC for tap water of 3,700 ug/L. Acetone is a common lab or field decontamination contaminant.

##### **4.1.5.2 Semivolatile Organic Compounds**

SVOCs were not detected in groundwater samples collected at SWMU 23 (Table 4-6).

##### **4.1.5.3 Metals and Cyanide**

Cyanide and metals including barium, chromium, copper, nickel, and zinc were detected in groundwater samples collected from SWMU 23 (Table 4-6). Detected cyanide and metal concentrations were below USEPA MCLs.

#### 4.1.6 Summary

SWMU 23 is located on Sand Mountain on the fault slice mapped during the FWI. The fault slice, which is interpreted to be an anticlinal structure, is located between the hanging wall and the footwall of the Opossum Valley Fault. The formations present on Sand Mountain range from Silurian to Pennsylvanian age and dip to the southeast on the eastern slope of the mountain and are overturned on the crest.

Perimeter seismic data collected during the FWI detected three velocity zones at the site indicating differences in rock materials underlying the Sloss Facility. The three velocities were interpreted to consist of the following: (1) residual soil, (2) the weathered upper bedrock surface, and (3) hard rock with little secondary porosity. Depths to bedrock of over 40 feet were encountered in the seismic survey and indicates undulating weathering of the bedrock surface on Sand Mountain has occurred and often several feet of relief is developed over tens of feet.

A total of four anomalous areas of high conductivity, A, B, C, and D, were observed in the EM-31 and EM-34 data. Anomalies A, C, and D occur in an area where shale and iron-rich sandstone of the Red Mountain Formation has been observed to outcrop and are approximately coincident with observed bedding planes. Shales are often conductive due to their bedding structure and high porosity. The well-defined nature of Anomaly B indicates it may be a result of increased soil thickness or increased bedrock porosity due to fracturing in the vicinity of the anomaly. Increased conductivities which result from the presence of conductive fluids (e.g. leachate) in the subsurface are generally more extensive features than observed at Anomaly B.

In the vicinity of SWMU 23, the observed groundwater elevations range from 535.24 to 603.90 ft amsl. The direction of groundwater flow is to the east toward the base of Sand Mountain. Hydraulic conductivities calculated from slug tests conducted on

monitor wells surrounding SWMU 23 range from  $6 \times 10^{-6}$  to  $3 \times 10^{-3}$  cm/sec and calculated groundwater flow velocities range from 3 to 1000 ft/year.

Five VOCs, 16 SVOCs including 15 PAHs and 4-methylphenol (p-cresol), 10 PP metals, and cyanide were detected in sludge samples collected from SWMU 23. TCLP metals barium and chromium were detected in the sludge samples collected from SWMU 23, but concentrations were well below RCRA TC levels.

Acetone, nine PP metals, and cyanide were detected in subsurface soil samples collected at SWMU 23. All detected parameters, except for arsenic, were below USEPA Industrial RBCs for soil ingestion. Arsenic exceeded the USEPA Industrial RBC in four subsurface soil samples; however, only one soil sample was outside the range for arsenic observed in background soil samples.

Acetone, barium, chromium, copper, nickel, zinc, and cyanide were detected in groundwater samples from SWMU 23. The USEPA RBC for tap water was not exceeded for acetone and USEPA MCLs were not exceeded for the other constituents.

#### **4.1.7 Conclusions**

Although only one arsenic concentration exceeded the USEPA Industrial RBC for soil ingestion and was outside the observed arsenic range in background samples, a risk evaluation will be prepared for this SWMU as proposed in the RFI Work Plan.

## **4.2 BLAST FURNACE EMISSIONS CONTROL SLUDGE WASTE PILE (SWMU 24)**

### **4.2.1 Site Specific Geology**

SWMU 24 is located east of the Opossum Valley Fault mapped during the FWI and is underlain by the Conasauga Formation (Figures 2-6 and 2-8). Measured dips of the Conasauga Formation range from 26° to 32° to the southeast.

Although monitor wells and piezometers have not been installed at SWMU 24, several monitor wells and FWI perimeter piezometers (P-2, P-3, P-4, MW-5, and MW-36) have been installed around the perimeter of the Sloss Facility or in adjacent SWMUs (Figure 2-2). These monitor wells and piezometers are screened in micritic limestone, interpreted to be within water-bearing portions of the Conasauga Formation. Typically, according to lithologic data, portions of the Conasauga Formation are more permeable near the weathered bedrock surface. Seismic data collected during the FWI indicated the upper Conasauga Formation has lower velocities and is more permeable than lower portions throughout the Sloss Facility.

The inferred bedrock topography of the SWMU 24 area is presented on Figure 2-8. The soil overburden at nearby piezometers and monitor wells consist primarily of clay (CH to CL) and the soil thickness ranges from 6 to 22 feet. The soil overburden is thickest at piezometer P-2 and thinnest at monitor well MW-5.

### **4.2.2 Site Specific Hydrogeology**

Lithologic samples, geophysical analysis, water-level measurements, and the results of the in-situ permeability testing in SWMUs adjacent to SWMU 24 were used to infer the hydrogeology at SWMU 24.

In the vicinity of SWMU 24, the observed groundwater elevations range from 517.61 (P-2) to 535.14 (MW-36) ft amsl. The shallow groundwater flow direction is to the northeast toward Five Mile Creek (Table 2-2 and Figure 2-9).

A downward hydraulic gradient of 0.12 ft/ft was present at monitor well MW-5 and piezometer P-4, screened in the upper Conasauga Formation, on May 17, 1997.

Hydraulic conductivities calculated from slug tests conducted on piezometers and monitor wells surrounding SWMU 24 range from  $4 \times 10^{-8}$  cm/sec (P-4) to  $9 \times 10^{-3}$  cm/sec (MW-5) (Table 4-2). Piezometers P-4 and MW-5 are a piezometer couplet and P-4 is screened approximately 20 feet deeper than monitor well MW-5. The difference in conductivities between P-4 and MW-5 is probably a result of the former being screened within less permeable portions of the Conasauga Formation. The average horizontal hydraulic gradient in the vicinity of SWMU 24 is 0.025 ft/ft. This hydraulic gradient was used to calculate groundwater flow velocities using an assumed porosity of 0.01 for P-4 and 0.20 for the remaining piezometers and monitor wells. Calculated groundwater flow velocities surrounding SWMU 24 range from 0.1 ft/year (P-4) to 1000 ft/year (MW-5).

#### **4.2.3 Sludge Sampling**

Five (5) sludge samples (including 1 duplicate sample) were collected from four locations at SWMU 24 and analyzed for VOCs, SVOCs, PP metals, barium, cyanide, and TCLP constituents (Table 3-2 and Figure 3-1).

##### **4.2.3.1 Sludge Description**

Sludge samples collected from SWMU 24 were dusky brown in color and were composed of silt to fine grained sand sized material (Appendix A.2). All sludge samples from SWMU 24 were dry and had no odor.

#### **4.2.3.2 Chemical Characteristics**

##### **4.2.3.2.1 Total Volatile Organic Compounds**

VOCs were not detected in sludge samples collected from SWMU 24 (Table 4-7).

##### **4.2.3.2.2 Total Semivolatile Organic Compounds**

SVOCs were not detected in sludge samples collected from SWMU 24 (Table 4-7).

##### **4.2.3.2.3 Total Metals and Cyanide**

Cyanide and 11 of the 13 PP metals were detected in the SWMU 24 sludge samples (Table 4-7).

##### **4.2.3.2.4 TCLP Analyses**

TCLP VOCs, SVOCs, organochlorine pesticides, and chlorinated herbicides were not detected in the sludge samples (Table 4-8). Two TCLP metals, barium and cadmium, were detected in the sludge samples (Table 4-8). Barium was detected in all of the sludge samples and concentrations ranged from 0.6 to 1.2 mg/L. These concentrations were well below the RCRA TC level of 100 mg/L for barium. Cadmium was detected in four of the five sludge samples at concentrations ranging from 0.01 to 0.06 mg/L which were below the RCRA TC level of 1 mg/L.

#### **4.2.4 Surficial Soil Sampling**

Sixteen (16) subsurface soil samples (including one duplicate sample) were collected at fifteen (15) locations around the perimeter of SWMU 24 and analyzed for VOCs, SVOCs, PP metals, barium, and cyanide (Table 3-1 and Figure 3-1).

##### **4.2.4.1 Soil Description**

Soils from SWMU 24 were composed primarily of moderate brown, stiff to plastic clay (CL to CH) with some light brown to grayish orange mottling, root material, and minor amounts of rock fragments (Appendix A.1). Saturated soil conditions were not encountered in soil samples from locations 24-SL0005 and 24-SL0007; soil samples from the remaining locations were dry to moist. No odors were detected in soil samples except for the sample from location 24-SL0007. Soil collected from sample location 24-SL0007 had a chemical odor and minor amounts of a black “tar-like” substance was observed in the sample.

##### **4.2.4.2 Chemical Characteristics**

###### **4.2.4.2.1 Total Volatile Organic Compounds**

Acetone was detected at 150 ug/kg in one soil sample, 970618-LD-24-SL0012, collected from SWMU 23 (Table 4-9). The detected concentration was well below the USEPA Industrial RBC of 200,000,000 ug/kg. Acetone is typically a result of lab or field decontamination procedures. No other VOCs were detected in surficial soil samples collected at SWMU 24.

#### 4.2.4.2.2 Total Semivolatile Organic Compounds

Sixteen PAHs were detected in surficial soil samples collected at SWMU 24 (Table 4-9). Concentrations of acenaphthene, anthracene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, naphthalene, and pyrene detected were below USEPA Industrial RBCs for soil ingestion in all samples. There are no USEPA Industrial RBCs calculated for acenaphthylene, benzo(g,h,i)perylene, and phenanthrene.

Benzo(a)anthracene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene were detected above their USEPA Industrial RBCs of 7,800 ug/kg in soil sample 970618-LD-24-SL0014 (63,000, 33,000, and 22,000 ug/kg, respectively).

Benzo(a)pyrene was detected above the USEPA Industrial RBC of 780 ug/kg in soil samples 970617-LD-24-SL0003 (1,400 ug/kg), 970618-LD-24-SL0011 (2,100 ug/kg), 970618-LD-24-SL-0014 (36,000 ug/kg), and 970618-LD-24-SL0016 (3,400 ug/kg) (Table 4-9).

PAHs were not detected in sludge samples collected at SWMU 24. The absence of PAHs in the sludge samples suggests that PAHs detected in surficial soil samples are not derived from the sludge material.

Soil samples that contain concentrations of PAHs exceeding USEPA Industrial RBCs are located in areas where runoff collects or drainage from areas upgradient of SWMU 24 occurs. Soil location 24-SL0003 is adjacent to a drainage ditch located along the north side of Summit Street (Figure 3-1). Soil location 24-SL0014 is located near a low area where standing water was observed during sampling. Soil location 24-SL0011 is located east of the storm water runoff sewer (SWMU 23). The distribution of PAHs which exceed USEPA Industrial RBCs, except for 24-SL0011, suggests the presence of the PAHs may be related to transport from sources upgradient of SWMU 24 and possibly



offsite sources. Elevated PAH concentrations at soil sampling location 24-SL0011 may be related to past waste management practices when plant wastes were discharged directly to the polishing pond area prior to construction of the BTF in 1976.

#### 4.2.4.2.3 Total Metals and Cyanide

Cyanide and 12 of the 13 PP metals were detected in surficial soil samples collected from SWMU 24. The concentration of lead detected was below the USEPA Residential RBC. Cyanide and all other detected metals except for arsenic and beryllium were below USEPA Industrial RBCs for soil ingestion.

Arsenic concentrations ranged from 5.5 to 21 mg/kg and exceeded the USEPA Industrial RBC of 3.8 mg/kg in all soil samples; however, detected arsenic concentration were within the range of arsenic detected in background soil samples (1.9 to 21 mg/kg) (Tables 4-1 and 4-9). Arsenic was not detected in TCLP sludge samples which suggests it is not derived from the sludge material.

Beryllium was detected in 5 of the 16 soil samples collected at SWMU 24 and concentrations ranged from 1.2 to 2.1 mg/kg (Table 4-9). Detected beryllium concentrations exceeded the USEPA Industrial RBC of 1.3 mg/kg in soil samples 970617-LD-24-SL0005 (2.1 mg/kg), 970618-LD-24-SL0011 (1.4 mg/kg), and 970618-LD-24-SL0016 (1.7 mg/kg); however, these concentrations were within the observed range of beryllium (0.44 to 2.6 mg/kg) in background soil samples (Table 4-1).

#### 4.2.5 Summary

SWMU 24 is located east of the Opossum Valley and is underlain by the Conasauga Formation. Measured dips of the Conasauga Formation range from 26° to 32° to the southeast. The soil overburden at nearby piezometers and monitor wells consist primarily of clay (CH to CL) and the soil thickness ranges from 6 to 22 feet.

In the vicinity of SWMU 24, the observed water table elevations range from 517.61 to 535.14 ft amsl and the shallow groundwater flow direction is to the northeast toward Five Mile Creek. Hydraulic conductivities calculated from slug tests conducted on piezometers and monitor wells surrounding SWMU 24 range from  $4 \times 10^{-8}$  to  $9 \times 10^{-3}$  cm/sec and calculated groundwater flow velocities range from 0.1 to 1000 ft/year.

Cyanide and 11 of the 13 PP metals were detected in sludge samples from SWMU 24. TCLP metals, barium, and cadmium, were detected in the sludge samples but were below RCRA TC levels.

Acetone, sixteen PAHs, 12 of the 13 PP metals, and cyanide were detected in surficial soil samples from SWMU 24. Benzo(a)anthracene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene were detected above USEPA Industrial RBCs in one soil sample and benzo(a)pyrene was detected above its RBC in several soil samples. PAHs were not detected in sludge samples collected at SWMU 24. The absence of PAHs in the sludge samples suggests that the PAHs detected in surficial soil samples are not derived from the sludge material. The presence of PAHs in the soil may be a result of transport from upgradient and possibly offsite sources or past waste management practices. Arsenic and beryllium exceeded RBCs; however, the concentrations were within observed concentration ranges in background soil samples.

#### **4.2.6 Conclusions**

Since concentrations of benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, indeno(1,2,3-cd)pyrene, arsenic, and beryllium detected at SWMU 24 exceeded USEPA Industrial RBCs for soil ingestion, a risk evaluation is appropriate for this SWMU.

### **4.3 LANDFILL AND BLAST FURNACE EMISSION CONTROL SLUDGE WASTE PILE NEAR LANDFILL (SWMUS 38 AND 39)**

#### **4.3.1 Site Specific Geology**

SWMUs 38 and 39 are located east of the Opossum Valley Fault mapped during the FWI and are underlain by the Conasauga Formation. Measured dips range from 26° to 32° to the southeast. The geology and structural features discussed below are depicted on Figures 2-6, 2-7, and 4-2. The cross section locations are presented on Figure 2-2.

Monitor wells MW-26 through MW-36 were screened in a micritic limestone interpreted to be within water-bearing portions of the Conasauga Formation, just east of the Opossum Valley fault. At SWMUs 38 and 39, a high degree of fracturing was observed in the vicinity of monitor wells MW-27, MW-29, MW-30S, MW-30D, MW-33 and MW-37. MW-35 appears to be screened within a relatively less permeable portion of the upper Conasauga Formation and may indicate that little weathering and or fracturing of the bedrock is present. Monitor well MW-26 and MW-34D are screened within less permeable portions of the deep Conasauga Formation (> 140 ft bls). Monitor wells MW-26, MW-34D, and MW-35 pumped dry during development and groundwater sampling. After 24 hours, water levels in these wells did not recover and were significantly less than the initial water levels measured in the wells prior to pumping.

The soil overburden consists primarily of clay (CH to CL) with areas of sandy and gravely clay. Thickness of the soil overburden ranges from 0 to 38 feet. The soil overburden is thickest in the near monitor well MW-27 and thinnest at MW-37. Significant non-native material related to plant activities was present overlying soils or almost directly on top of the bedrock surface at monitor wells MW-31, MW-32, MW-33, MW-34S, MW-34D, and MW-35 (Figure 4-2). Bedrock topography for the SWMU 38 and 39 area is presented in Figure 2-8.

### **4.3.2 Site Specific Hydrogeology**

Lithologic samples, geophysical surveys, water-level measurements, and the results of the in-situ permeability testing were used to develop an understanding of the hydrogeology at SWMUs 38 and 39.

#### **4.3.2.1 Geophysics Evaluation**

The FWI seismic survey report is presented in Appendix E of the RFI Facility-Wide Report and the Geophysical Investigation Report which presents the results of the conductivity and/or resistivity survey are presented in Appendix B of this report.

##### **4.3.2.1.1 Facility-Wide Seismic Investigation**

Perimeter seismic data collected during the FWI detected three velocity zones at the site indicating differences in rock materials underlying the Sloss Facility. The three velocities were interpreted to consist of the following: (1) residual soil, (2) the weathered upper bedrock surface of the Conasauga Limestone, and (3) hard rock with little secondary porosity.

Seismic spreads indicated that residual soil rests on an intermediate layer of fractured and weathered bedrock which in turn rests on a high velocity bedrock west of the LaFarge Quarry (S5, S6, S29, S35) (Figure 3-4). Residual soils at the northern end of the main plant area, where SWMUs 38 and 39 are located, have more variable velocities, generally ranging from 2000 ft/sec to over 4,000 ft/sec.

The intermediate layer or weathered limestone, where it exists, has a velocity usually somewhat less than 6,000 ft/sec. The velocity of the intermediate layer is at the lower end of the range of velocity observed in weathered limestone.

The higher velocity layer (hard bedrock with little secondary porosity) in the northern end of the main plant, where SWMUs 38 and 39 are located, show some variation in bedrock velocity and often have velocities less than 8,000 ft/sec. Two spreads in the north end of the main plant area, centered about spreads S6 and S29 (near monitor wells MW-34S, MW-34D, MW-35, MW-37 and MW-27), have higher velocities exceeding 20,000 ft/sec and reflect the presence of unweathered and unfractured blocks of bedrock.

The northern part of the main plant area, which includes SWMUs 38 and 39, has variable high velocity bedrock depths generally over 20 feet. Bedrock in the north end of the main plant area is generally deeper than in the rest of the site. The deeper areas are seen on spreads S6, S34, and S35. Seismic data indicates variable weathering of the top of the Conasauga Formation has occurred and often several feet of relief is developed over tens of feet.

#### 4.3.2.1.2 Conductivity/Resistivity Survey

EM-31 conductivity and resistivity survey lines are shown on Figure 3-3 and the Geophysical Investigation report is included as Appendix B. EM-31 readings were taken every 5 feet around the northern, eastern, and southern perimeter of SWMUs 38 and 39 and penetrated approximately 20 ft bls. Shallow resistivity readings were collected along the western perimeter of SWMU 38 with a 20 foot array length. Deep resistivity readings were collected around the perimeter of SWMUs 38 and 39 with a 100 foot array length.

Before any resistivity data was recorded two Schlumberger soundings (S1 and S2) were conducted on the western and eastern side of SWMUs 38 and 39, respectively. Results of the two soundings indicates bedrock is at 9.5 and 21 ft bls at S1 and S2, respectively, and the overburden is more conductive than the limestone bedrock. Furthermore, Schlumberger soundings confirm the general rock resistivity assumptions used for evaluating the resistivity data.

A total of four anomalous areas of high conductivity, labeled E, F, G, and H on Figures 1 and 2 of Appendix B, were observed in the EM-31 and resistivity data. Anomaly E, F, and H were observed in the EM-31 and resistivity data. Anomaly G was only observed in the EM-31 data.

Anomalies E and F are broad features in the shallow and deep data. An underground pipe connecting the storm water runoff sewer (SWMU 25) to the polishing pond at the BTF is present in the vicinity of Anomaly E and may be the cause of higher conductivities in this region. Higher conductivities at Anomaly E may also be the result of increased overburden thickness in this area although drilling logs and seismic data indicate the soil thickness is approximately constant or thinner in this area.

Review of historic aerial photos indicates Summit Road was realigned in the late 1970's over portions of SWMU 24 which is composed of sludge (flue dust) generated in the former blast furnace. Anomalies E and F are in the area formerly occupied by SWMU 24 and higher conductivities in this area may be a result of the presence of minor amounts of flue dust material beneath the road not removed during realignment of Summit Road. Anomalies E and F are similar to Anomaly H which is believed to be due to the presence of flue dust in this area.

Anomaly G is only present in the shallow data and coincides with the overhead contact cooling water pipeline. Anomaly G is not considered to be an indicator of a bedrock anomaly in this area.

Anomaly H is present in both the shallow and deep data and is thought to be due to the presence of conductive sludge (flue dust) material in the subsurface at this location. Flue dust was observed at the surface in the vicinity of Anomaly H during the geophysical field program. The geophysics survey line was located close to the waste pile at the southern end of SWMU 39 in order to minimize the effect of overhead power

lines present at this location and due to the presence of slag piles related to activities conducted by Vulcan Materials. Vulcan Materials leases the property south of SWMU 39 from Sloss Industries.

#### **4.3.2.2 Hydrogeology**

In the vicinity of SWMUs 38 and 39, the observed groundwater elevations in the upper Conasauga Formation range from 516.13 (MW-35) to 552.59 (MW-32) ft amsl (Table 2-2 and Figure 2-9). The observed potentiometric surface elevations in the lower Conasauga Formation range from 464.10 (MW-26) to 540.41 (MW-34D) ft amsl (Table 2-2 and Figure 2-10). The potentiometric surface elevations in the upper and lower Conasauga Formation at monitor well couplet MW-34S and MW-34D are approximately equivalent. However, the potentiometric surface elevation at monitor well MW-26 is significantly less than the potentiometric surface elevation at nearby monitor well MW-27 and indicates the upper and lower units are not hydraulically connected at all locations throughout the site.

An upward vertical hydraulic gradient of 0.0010 ft/ft was present at monitor wells MW-30S and MW-30D, screened in the upper Conasauga Formation, on August 17, 1997. An upward and downward hydraulic gradient of 0.0057 and 0.69 ft/ft was present between the upper and lower Conasauga Formation at monitor wells pairs MW-34S/MW-34D and MW-26/MW-27, on August 17, 1997, respectively. The change in hydraulic gradients at monitor well pairs MW-34S/MW-34D and MW-26/MW-27 may be a result of complex recharge/discharge relationships caused by ongoing mining activities at the Southern Ready Mix Quarry located approximately ¼ mile northeast of Sloss Industries.

The groundwater flow direction in the upper Conasauga Formation is to the northeast toward Five Mile Creek (Figure 2-9). In the SWMU 38 and 39 area, the groundwater flow direction in the lower Conasauga Formation appears to be to the south (Figure 2-10).

Hydraulic conductivities calculated from slug tests performed in the upper portion of the Conasauga Formation surrounding SWMUs 38 and 39 range from  $4 \times 10^{-8}$  cm/sec (MW-35) to  $7 \times 10^{-2}$  cm/sec (MW-29). Hydraulic conductivities at SWMUs 38 and 39 in the lower, less permeable portions of the Conasauga Formation range from  $1 \times 10^{-7}$  to  $2 \times 10^{-7}$  cm/sec at MW-34D. The average hydraulic gradient in the vicinity of SWMUs 38 and 39 is 0.025 ft/ft. This average hydraulic gradient was used to calculate groundwater flow velocities using an assumed porosity of 0.20 for upper Conasauga Formation materials. For monitor well MW-35, screened within the upper Conasauga Formation, a porosity of 0.01 was used since well recovery was similar to wells screened within the lower Conasauga Formation. Calculated groundwater flow velocities in the upper Conasauga Formation range at SWMUs 38 and 39 from 0.3 ft/year (MW-35) to 9000 ft/year (MW-29). Calculated groundwater flow velocities in the lower Conasauga Formation, which were calculated using the same gradient as in the upper Conasauga Formation and a porosity of 0.01, range from 0.3 to 0.6 ft/year at MW-34D.

#### **4.3.3 SWMU 39 Sludge Sampling**

Seven (7) sludge samples (including 1 duplicate sample) were collected from six locations at SWMU 39. Four of the six samples were analyzed for VOCs, SVOCs, PP metals, barium, cyanide, and TCLP constituents (Table 3-2 and Figure 3-3).

##### **4.3.3.1 Sludge Description**

Sludge samples collected from SWMU 39 were dusky brown in color and were composed of silt to fine grained sand sized material (Appendix A.2). All sludge samples from SWMU 39 were dry and had no odor.



#### **4.3.3.2 Chemical Characteristics**

##### **4.3.3.2.1 Total Volatile Organic Compounds**

VOCs were not detected in sludge samples collected from SWMU 24 (Table 4-10).

##### **4.3.3.2.2 Total Semivolatile Organic Compounds**

One SVOC, benzo(k)fluoranthene, was detected in sludge sample 970619-LD-39-SM0006 at a concentration of 30 ug/kg (Table 4-10).

##### **4.3.3.2.3 Total Metals and Cyanide**

Cyanide and 10 of the 13 PP metals were detected in sludge samples collected from SWMU 39 (Table 4-10).

##### **4.3.3.2.4 TCLP Analyses**

TCLP VOCs, SVOCs, organochlorine pesticides, and chlorinated herbicides were not detected in sludge samples (Table 4-11). TCLP metals, barium, and cadmium, were detected in the sludge samples collected at SWMU 39 (Table 4-11). Barium was detected in three of the four samples and concentrations ranged from 0.91 to 2.8 mg/L. These concentrations were well below the RCRA TC level of 100 mg/L. Cadmium was detected in sludge sample 970616-LD-39-SM0002 at a concentration of 0.036 mg/L which was below the RCRA TC level of 1 mg/L.

#### **4.3.4 Subsurface Soil Sampling**

Twenty-one (21) subsurface soil samples (including two duplicate sample) were collected at ten (10) locations monitor well locations around the perimeter of SWMUs 38 and 39 and analyzed for VOCs, SVOCs, PP metals, barium, and cyanide (Table 3-3 and Figure 3-3).

##### **4.3.4.1 Soil Description**

Soils from SWMU 38 were composed primarily of pale yellowish brown to moderate reddish brown, stiff to plastic clay (CL to CH) with some dusky red mottling, iron concretions, and minor amounts of micritic limestone fragments (Appendix A.3). Soils from SWMU 39 were composed primarily of light brown to pale olive, stiff to plastic clay (CL to CH) with minor amounts of rounded pebbles and micritic limestone fragments. Saturated soil conditions were not encountered until directly above the bedrock surface. No odor was detected in soil samples and OVM readings were below detection limits in all samples.

##### **4.3.4.2 Chemical Characteristics**

###### **4.3.4.2.1 Total Volatile Organic Compounds**

Toluene was detected in soil sample 970804-LD-38-SL9026 (duplicate of 970804-LD-38-SL0026(10-12) at 8 ug/kg (Table 4-12). The concentration of toluene detected was below the USEPA Industrial RBC of 410,000,000 ug/kg. In the remaining samples collected from SWMUs 38 and 39, VOCs were not detected (Table 4-12).

#### 4.3.4.2.2 Total Semivolatile Organic Compounds

SVOCs were not detected in subsurface soil samples collected from SWMUs 38 and 39 (Table 4-12).

#### 4.3.4.2.3 Total Metals and Cyanide

Cyanide and 10 of the 13 PP metals were detected in soil samples collected from SWMUs 38 and 39 (Table 4-12). Detected lead concentrations were below the USEPA Residential RBC and detected antimony, barium, chromium, copper, lead, nickel, silver, zinc, and cyanide concentrations were below USEPA Industrial RBCs.

Arsenic was detected above the USEPA Industrial RBC of 3.8 mg/kg in soil samples 970805-LD-38-SL0027(11-13), 970807-LD-38-SL0030(9-11), 970807-LD-38-SL0030(17-19), 970808-LD-39-SL0033(11-13), 970805-LD-39-SL0034(10-12), 970804-LD-39-SL00036(5-7), and 970804-LD-39-SL0036(10-12) at concentrations ranging from 4.1 to 5.2 mg/kg. All concentrations of arsenic which exceeded the USEPA Industrial RBC were within the range observed in background soil samples (1.9 to 21 mg/kg) collected as part of the FWI (Table 4-1). The presence of arsenic in the background soil samples and the fact that arsenic was not detected in TCLP sludge samples collected at SWMU 39 suggests arsenic in the soil at SWMU 39 is not derived from the sludge material.

Beryllium was detected above the USEPA Industrial RBC of 1.3 mg/kg in soil samples 970804-LD-38-SL0026(10-12), 970804-LD-38-SL9026 (duplicate of 970804-LD-38-SL0026[10-12]), and 970807-LD-38-SL0029(19-21) at 1.9, 1.6, and 2.8 mg/kg, respectively. Beryllium concentrations which exceeded the USEPA Industrial RBC were within the range observed in background soil samples (0.44 to 2.6 mg/kg) collected as part of the FWI (Table 4-1).

#### **4.3.5 Groundwater Quality**

Fifteen (15) groundwater samples (including one duplicate sample) were collected at SWMUs 38 and 39 from monitor wells MW-26, MW-27, MW-28, MW-29, MW-30S, MW-30D, MW-31, MW-32, MW-33, MW-34S, MW-34D, MW-35, MW-36, and MW-37. The groundwater samples were analyzed for VOCs, SVOCs, PP metals, barium, and cyanide (Figure 3-3). Field analyses conducted during groundwater sampling are summarized on Table 3-4.

##### **4.3.5.1 Volatile Organic Compounds**

VOCs including acetone, benzene, toluene, trichloroethene, and xylenes were detected in groundwater samples collected from SWMUs 38 and 39 (Table 4-13). Detected toluene, trichloroethene, and xylene concentrations were below USEPA MCLs and acetone was below the USEPA RBC for tap water.

Benzene was detected above the USEPA MCL of 5 ug/L in groundwater samples 970821-LD-38-GW0026 (13 ug/L) and 970831-LD-39-GW0034D (6 ug/L) collected from the deep Conasauga Formation (Table 4-13). Benzene was not detected in sludge or soil samples collected at SWMUs 38 and 39.

##### **4.3.5.2 Semivolatile Organic Compounds**

SVOCs were not detected in groundwater samples collected from SWMUs 38 and 39 (Table 4-13).

#### 4.3.5.3 Metals and Cyanide

Cyanide and PP metals including barium, chromium, copper, zinc, lead, and silver were detected in groundwater samples collected from SWMUs 38 and 39 (Table 4-13). Detected barium, chromium, copper, and zinc concentrations were below USEPA MCLs.

Lead was detected above the USEPA MCL of 0.015 mg/L in groundwater sample 970821-LD-39-GW0034D (0.04 mg/L) (Table 4-13). This elevated concentration of lead may be attributed to suspended sediment in the well since the water was slightly turbid. Silver was detected above the USEPA MCL of 0.1 mg/L in groundwater sample 970821-LD-39-GW0036 (0.24 mg/L) (Table 4-12).

Cyanide was detected in six of the eight groundwater samples collected at SWMU 39 but concentrations only exceeded the USEPA MCL of 0.2 mg/L in two of the six groundwater sampling locations. The USEPA MCL for cyanide was exceeded in groundwater samples 970821-LD-39-GW0032 (0.38 mg/L), 970820-LD-39-0034S (0.21 mg/L), and 970820-LD-39-9034S (duplicate of 970820-LD-39-0034S) (0.22 mg/L) which are located in the vicinity of the southern portion of SWMU 39. Cyanide was not detected in monitor wells installed around the perimeter of SWMU 38.

#### 4.3.6 Summary

SWMUs 38 and 39 are located east of the Opossum Valley Fault mapped during the FWI and are underlain by the Conasauga Formation. Measured dips range from 26° to 32° to the southeast. The soil overburden ranges from 0 to 38 ft thick and consists primarily of clay (CH to CL) with areas of sandy and gravely clay; however, significant non-native material related to plant activities was present overlying soils or almost directly on top of the bedrock surface at monitor wells in the area of SWMU 39.

Perimeter seismic data collected during the FWI detected three velocity zones at the site indicating differences in rock materials underlying the Sloss Facility and in the SWMU 38 and 39 area. The three velocities were interpreted to consist of the following: (1) residual soil, (2) the weathered upper bedrock surface of the Conasauga Limestone, and (3) hard rock with little secondary porosity. Bedrock in the north end of the main plant area in the SWMU 38 and 39 area is generally deeper than in the rest of the site. Seismic data indicates variable weathering of the top of the Conasauga Formation has occurred and often several feet of relief is developed over tens of feet.

A total of four anomalous areas of high conductivity, labeled E, F, G, and H were observed in the EM-31 and resistivity data. Anomalies E and F are in the area formerly occupied by SWMU 24 and higher conductivities in this area may be a result of the presence of minor amounts of flue dust material beneath the road not removed during realignment of Summit Road. Anomaly G is only present in the shallow data and coincides with the overhead contact cooling water pipeline. Anomaly H is present in both the shallow and deep data and is thought to be due to the presence of conductive sludge (flue dust) material in the subsurface at this location.

In the vicinity of SWMUs 38 and 39, the observed groundwater elevations in the upper Conasauga Formation range from 516.13 to 552.59 ft amsl and the groundwater flow direction is to the northeast toward Five Mile Creek. Hydraulic conductivities calculated from slug tests performed in the upper portion of the Conasauga Formation range from  $4 \times 10^{-8}$  to  $7 \times 10^{-2}$  cm/sec and calculated groundwater flow velocities range from 0.1 to 9000 ft/year.

The observed potentiometric surface elevations in the lower Conasauga Formation range from 516.13 to 552.59 ft amsl and the groundwater flow direction appears to be to the south. Hydraulic conductivities at SWMUs 38 and 39 in the lower, less permeable portions of the Conasauga Formation range from  $1 \times 10^{-7}$  to  $2 \times 10^{-7}$  cm/sec at MW-34D and calculated groundwater flow range from 0.3 to 0.6 ft/year at MW-34D.

One SVOC, benzo(k)fluoranthene, 10 of the 13 PP metals, and cyanide were detected in sludge samples collected from SWMU 39. Barium and cadmium were detected in TCLP sludge samples but concentrations were below RCRA TC levels.

One VOC, toluene, 10 of the 13 PP metals, and cyanide were detected in subsurface soil samples collected from SWMUs 38 and 39. Detected toluene and PP metals, except arsenic and beryllium, and cyanide concentrations were below USEPA Industrial RBCs in all samples. Arsenic and beryllium were detected above USEPA Industrial RBCs; however, concentrations were within the range observed in background soil samples. The presence of arsenic in the background samples and the fact that arsenic was not detected in TCLP sludge samples collected from SWMU 39 suggests the arsenic in subsurface soils at SWMU 39 is not derived from the sludge.

Five VOCs, six PP metals, and cyanide were detected in groundwater samples collected at SWMUs 38 and 39. Benzene and lead were above USEPA MCLs in groundwater samples collected in the deep water-bearing zone of the Conasauga Formation. Silver exceeded the USEPA MCL in one monitor well in the upper Conasauga. Cyanide was detected in six of the eight groundwater samples collected at SWMU 39; however, cyanide was not detected in groundwater samples collected from SWMU 38.

#### **4.3.7 Conclusions**

Since detected concentrations of arsenic and beryllium in subsurface soils and benzene, lead, silver, cyanide in groundwater at SWMUs 38 and 39 exceeded RBCs for surficial soil and USEPA MCLs, a risk evaluation is appropriate for this SWMU.

## 5.0 BASELINE RISK ASSESSMENT

A baseline risk assessment was conducted for the Land Disposal Areas following USEPA Region IV Guidance (USEPA, 1996a). Four SWMUs (SMWUs 23, 24, 38, and 39) were included in the evaluation of the Land Disposal Areas. The purpose of a baseline risk assessment is to determine the potential risk to human health and the environment posed by chemical constituents detected at the site. The analytical data presented in Section 4 of this report were used to conduct the risk assessment.

### 5.1 DATA ANALYSIS

Constituents of potential concern (COCs) were selected according to USEPA (1996a) criteria by comparison of maximum concentrations to risk-based screening levels and to twice background concentrations. Background data for soil were presented in Table 2-1. The USEPA Region III RBCs (1997a) used for screening were obtained directly from the table for carcinogens and adjusted to a level equivalent to a hazard quotient (HQ) of 0.1 for non-carcinogens (USEPA, 1996a).

Soil, sludge, and groundwater samples were collected from the four SWMUs associated with the Land Disposal Areas. The analytical data were evaluated following the guidelines provided by the USEPA (1989b; 1996a) for use in the risk assessment as described below:

- All constituents never detected in the samples were eliminated from further analysis for that group.
- For non-detects, one-half the sample quantitation limit (SQL) was used as a surrogate concentration (rather than using zero or eliminating the data point).

The results of the statistical analyses are presented in the constituent occurrence tables for the four SWMUs. The data were divided based on geographical location as



seen in Figure 1-2 with SWMUs 23 and 24 evaluated individually and SWMUs 38 and 39 evaluated together. The information in the constituent occurrence tables (Tables 5-1 through 5-8) includes, for each detected constituent, the frequency of detection (ratio of the number of detections to the total number of samples in that group), the range of SQLs used to calculate surrogate concentrations for non-detections in the statistical calculations, the range of detected values, the average detection, the arithmetic mean (using surrogate concentrations for non-detections) assuming a log-normal distribution, the 95 percent upper confidence level (UCL) on the mean, and the exposure point concentration (EPC). Tables 5-1 and 5-2 summarize the data collected for subsurface soil and sludge at SWMU 23, respectively. At SWMU 24, surficial soil and sludge data were collected and are summarized in Tables 5-3 and 5-4, respectively. Subsurface soil data for SWMUs 38 and 39 are summarized in Table 5-5, while sludge data for SWMU 39 are provided in Table 5-6. Groundwater data are summarized in Tables 5-7 and 5-8 for SWMU 23 and SWMUs 38 and 39, respectively. Groundwater data were not available for SWMU 24.

#### **5.1.1 Soil/Sludge**

Constituents detected in soil and sludge were divided into chemical classes of PAHs, VOCs, SVOCs, and inorganics. The PAHs were divided further into carcinogenic and non-carcinogenic classes. To identify the COCs, the maximum detected concentration of each constituent in the surficial soil and sludge samples was compared to residential screening values for soil ingestion determined at a cancer risk level of  $10^{-6}$  or a hazard quotient (HQ) of 0.1 following USEPA (1996a) guidelines. Maximum concentrations in subsurface soil samples were compared to industrial screening values for soil ingestion at the same  $10^{-6}$  and 0.1 risk levels. Those constituents that exceeded the residential screening values or industrial screening values were identified as COCs. Additionally, if one compound in any chemical class (except for inorganics) exceeded the screening levels and was identified as a COC, all compounds in that chemical class became COCs. For example, if chrysene, a potentially carcinogenic PAH, were detected

below its RBC, it would still be included as a COC if other potentially carcinogenic PAHs were detected above their RBCs. Table 5-9 presents the results of the selection of COCs for subsurface soils for SWMU 23, and arsenic was identified as the only COC. The COCs for sludge for SWMU 23 are presented in Table 5-10 and include carcinogenic PAHs and five inorganics.

The surficial soil and sludge COCs for SWMU 24 are identified in Tables 5-11 and 5-12, respectively. The carcinogenic PAHs and four inorganics (antimony, beryllium, cadmium, and chromium) were selected as COCs. The sludge COCs included the four surficial soil inorganics as well as lead and zinc.

Only one constituent (beryllium) was identified for the subsurface soil at SWMUs 38 and 39, as seen in Table 5-13. Table 5-14 summarizes the criteria for COC selection for the sludge for SWMUs 38 and 39. The COCs selected are antimony, beryllium, cadmium, and zinc. The list of COCs by SWMU for each medium is presented in Table 5-15.

### **5.1.2 Groundwater**

VOCs and inorganics were detected in the groundwater. Groundwater is not a medium of concern since it is not used as a potable water supply. Therefore, COCs were not selected for groundwater.

## **5.2 TOXICITY ASSESSMENT**

This section discusses the two general categories of toxicity values (non-carcinogenic and carcinogenic) used to evaluate risk. Toxicity values for non-carcinogenic and carcinogenic effects were obtained from the USEPA's Integrated Risk Information System (IRIS) (1997) and USEPA's Health Effects Assessment Summary Tables (HEAST) (USEPA, 1997b).

### 5.2.1 Non-Carcinogens

The reference dose (RfD) is an estimate of a daily exposure level that is unlikely to cause non-carcinogenic health effects. Thus, exposure levels below the RfD are unlikely to produce toxic effects in even sensitive subpopulations. Chronic RfDs are used to assess long-term exposures ranging from 7 years to a lifetime; subchronic RfDs evaluate the potential of adverse health effects associated with exposure to chemicals during a period of 2 weeks to 7 years. RfDs are derived by the USEPA by dividing the no observed adverse effect levels (NOAELs) or lowest observed adverse effect levels (LOAELs) by uncertainty factors typically ranging from 10 to 10,000 depending on the suitability and quality of the available data.

RfDs that are approved by the USEPA are called verified reference doses for oral exposure (RfD<sub>o</sub>s) and reference concentrations (RfCs) for inhalation exposure. Table 5-16 presents the RfDs and RfCs used in this risk assessment. Target sites affected by each constituent are shown in the table for both inhalation and oral exposures. The confidence level and uncertainty factors associated with the toxicity values also are listed. The uncertainty factor represents a specific area of uncertainty inherent in the extrapolation from the available data. The confidence levels (low, medium, and high) assess the degree of confidence the USEPA has in the database used to develop the toxicity value.

Toxicity values for dermal exposure are not available (appropriate toxicity data are scarce); therefore, the oral RfDs are adjusted to an absorbed dose, using the constituent-specific oral absorption efficiency, as recommended by the USEPA (1989b). This correction is necessary due to the differences in absorption between the skin and the gastrointestinal (GI) tract. In calculating a dermal RfD from an oral RfD, the oral RfD is multiplied by the oral absorption efficiency.

### 5.2.2 Carcinogens

Constituents are classified as known, probable, or possible human carcinogens based on the USEPA weight-of-evidence scheme in which chemicals are systematically evaluated for their ability to cause cancer in humans or laboratory animals. The USEPA classification scheme (USEPA, 1989b) contains six classes (five if B1 and B2 are classified together under the heading of Class B), based on the weight of available evidence, as follows:

- A Known human carcinogen;
- B1 Probable human carcinogen -- limited evidence in humans;
- B2 Probable human carcinogen -- sufficient evidence in animals and inadequate data in humans;
- C Possible human carcinogen -- limited evidence in animals;
- D Inadequate evidence to classify; and
- E Evidence of non-carcinogenicity.

Constituents in Classes A, B1, B2, and C generally are included in risk assessments as potential human carcinogens; however, Class C carcinogens may be evaluated on a case-by-case basis (USEPA, 1989b). In this risk assessment, the Class C carcinogens were evaluated with the Class A and B carcinogens.

The USEPA currently uses the linearized multistage model for extrapolating cancer risk from high doses associated with occupational exposure or laboratory animal studies to low doses typically associated with environmental exposures. The model provides a 95 percent upperbound estimate of cancer incidence at a given dose. The slope of the extrapolated curve, called the cancer slope factor (CSF), is used to calculate the probability of cancer associated with the exposure dose. Inhalation exposures are evaluated using the unit risk factor (UR<sub>i</sub>).

CSFs are derived from the assumption that any dose level has a probability of causing cancer. The cumulative dose, regardless of the exposure period, determines the risk; therefore, separate CSFs are not derived for subchronic and chronic exposure periods. Table 5-17 presents the CSFs and URs used in this report. Target sites affected by the COCs and the USEPA cancer classifications of the COCs are shown. The oral CSF is adjusted to evaluate dermal exposures (Table 5-17). This is done by dividing the oral CSF by the oral absorption efficiency. The oral and dermal absorption efficiencies are shown in Table 5-18, and the adjusted values are shown in Table 5-19.

### **5.2.3 Toxic Effects Summary**

Toxicity values for the COCs were identified in the previous section. COCs include seven carcinogenic PAHs, antimony, arsenic, beryllium, cadmium, chromium, lead, mercury, nickel, selenium, and zinc. This section presents a brief summary of the known toxic effects of the COCs and the basis for their toxicity values.

Most of the toxicity data derived from humans come from occupational, accidental, or intentional exposures. Epidemiological studies of human populations which are adequate to derive toxicity values are limited to a few chemicals. In most epidemiological studies, it is difficult to determine the exposure conditions (i.e., concentrations, frequency, duration, etc.); the number of exposed individuals is small; the incidence of the effect is small; and exposure to multiple chemicals may have occurred. Therefore, data derived from laboratory animal studies frequently are used to extrapolate potential risks to humans. Although reliance on laboratory animal studies increases the uncertainty associated with risk estimates, modern toxicology is built on the premise that the toxic effects of chemical agents are similar for laboratory animals and humans. The weight of evidence increases when similar results are observed in both sexes, more than one species of laboratory animal, across various routes of exposure, and case reports from human exposures.

### 5.2.3.1 PAHs

PAHs are found throughout the environment from both natural and anthropogenic (man-made) sources. These compounds are closely related chemically and have similar toxic effects; however, not all of the PAHs are thought to be carcinogenic. Benzo(a)pyrene is the only carcinogenic PAH for which the USEPA has developed a CSF. The current recommendation from USEPA is to estimate risk for other PAHs based on structure-activity relationships relative to benzo(a)pyrene. The risk estimates are conducted by converting the CSF and  $UR_i$  for benzo(a)pyrene by a toxicity equivalency factor (TEF). Although several epidemiological studies have linked human exposure to mixtures of PAHs containing benzo(a)pyrene to lung cancer, the studies are not sufficient to determine that benzo(a)pyrene or any other PAH is responsible. Numerous animal studies have been conducted to investigate the carcinogenicity of benzo(a)pyrene. These include inhalation, dietary, gavage, dermal, and other studies involving guinea pigs, hamsters, rats, mice, and several primates. Tumors generally are produced at the site of administration; however, tumors at distant sites have been reported. The most common tumor sites include the stomach, lungs, and skin. The current oral CSF of 7.3 kilogram-day per milligram (kg-day/mg) is based on the geometric mean of slope factors derived from four studies (IRIS, 1997). USEPA Region IV (1996a) provided a  $UR_i$  of 0.88 milligrams per cubic meter ( $\text{mg}/\text{m}^3$ )<sup>-1</sup>.

An RfD has not been derived for the carcinogenic PAHs. However, the RfD for pyrene is used as a surrogate. Reported noncarcinogenic effects of PAHs in laboratory animals include dermatitis, skin sensitization to sunlight, immunosuppression, reproductive and developmental effects, liver, kidney, and gastrointestinal tract at concentrations ranging from 10 milligrams per kilogram per day (mg/kg/day) to more than 100 mg/kg/day (Agency for Toxic Substances and Disease Registry [ATSDR], 1989).

### 5.2.3.2 Antimony

Antimony production has been associated with an increase in lung cancer among exposed workers (NIOSH, 1978), and one inhalation study in rats also indicated that antimony trioxide might produce lung and liver tumors (ACGIH, 1980; USEPA, 1980). Several studies in bacterial test systems report that various antimony compounds, including antimony trioxide, antimony trichloride, and antimony pentachloride, may be mutagenic. Reports of effects on reproduction are limited. Among the effects on reproduction reported for humans is impairment of the female reproductive system. Female workers exposed to metallic antimony dust, antimony trioxide, and antimony pentoxide had an increased incidence of gynecological disorders and late spontaneous abortions. Antimony was found in the breast milk, placental tissue, amniotic fluid, and blood of the umbilical cord in exposed workers. Decreased weight gain was observed in children born of workers exposed to antimony. The same paper reports a study in which intraperitoneal administration of antimony produced changes in rats that support the findings of human reproductive effects.

Cardiovascular changes associated with exposure to antimony represent a serious health effect. Exposure to either trivalent or pentavalent antimonial compounds can produce electrocardiogram (ECG) changes in humans. Histopathological evidence of cardiac edema, myocardial fibrosis, and other signs of myocardial structural damage indicates that antimony may produce even more severe, possibly permanent, myocardial damage in humans. Parallel findings of functional changes in ECG patterns and of histopathological evidence of myocardial structural damage have also been obtained in animal toxicity studies. Pneumoconiosis in response to inhalation exposure and dermatitis in response to skin exposure also may have been observed among individuals exposed to antimony or its compounds.

USEPA (IRIS, 1997) calculated an RfD of 0.0004 mg/kg/day based on a study showing altered blood chemistry in rats orally dosed with antimony.

### 5.2.3.3 Arsenic

Arsenic is a naturally-occurring element and may be found in soil, water, food, and air. Normal, or background, exposure from these sources is estimated at about 50 micrograms per day (ug/day). Food is the largest background source under most circumstances. Ingestion of as little as 50 milligrams (mg) to 300 mg can be fatal to humans. Lower levels have caused gastrointestinal distress (nausea, vomiting, and diarrhea), loss of appetite, hair and weight loss, and irritation of mucous membranes. Long-term exposure to arsenic is known to cause damage to the nervous system, blood vessels, and skin. Arsenic is known to be a human carcinogen. Cancer of the skin, lungs, liver, kidney, and bladder have been associated with human exposures to arsenic. Arsenic has not been shown to be carcinogenic in laboratory animals. An oral RfD, oral CSF, and UR<sub>1</sub> have been developed by USEPA (IRIS, 1997). All of the toxicity values were based on human epidemiological studies.

The oral RfD was developed from a study of Taiwanese populations exposed to naturally-occurring arsenic in water-supply wells. The mean concentration of arsenic in the low-dose group was 9 ug/L and was identified as the NOAEL. The mean arsenic concentration in the LOAEL group was 170 µg/L. The most sensitive effects included darkening of the skin, thickening of the skin of the palms and soles, and the appearance of "corns" or "warts" on the hands, feet, and body. In extreme cases, blood vessel damage may lead to gangrene of the feet (called blackfoot disease). Based on an assumed water consumption rate of 4.5 liters per day (L/day), background exposure to 0.002 mg of arsenic per day in food, and an average body weight of 55 kilograms (kg), the arsenic concentration in the NOAEL group was converted to 0.0008 mg/kg/day and divided by an uncertainty factor of 3 to derive the RfD of 0.0003 mg/kg/day. The uncertainty factor was selected to account for the lack of data on reproductive effects and to account for individuals who may be more sensitive than those included in the study. Overall, the USEPA has assigned a medium confidence level to the RfD. Although more than 40,000



people were included in the study, exposures were not well characterized and other contaminants were present.

The CSF for arsenic was based on the same epidemiological studies as the RfD, and skin cancer was the tumor type evaluated. The  $UR_i$  was derived from epidemiological studies of smelter workers which showed a statistically increased incidence of lung cancer in these workers.

#### **5.2.3.4 Beryllium**

The lung and skin are the primary organs affected by beryllium exposure. Contact with the skin can cause rashes and nodules to develop in people who are allergic to beryllium. If beryllium gets embedded under the skin, an ulcer can develop. However, it is unlikely that beryllium is absorbed through the skin (ATSDR, 1997). Inhalation of soluble beryllium compounds at concentrations greater than  $0.1 \text{ mg/m}^3$  can result in a severe and immediate inflammation of the entire respiratory tract, including the nasal passages, pharynx, and lungs. Recovery generally is complete within a few weeks or months. Long-term exposure to beryllium compounds, particularly beryllium oxide, can result in a chronic granulomatous pulmonary disease called berylliosis. Symptoms include shortness of breath and, in severe cases, clubbing of the fingers. Pulmonary fibrosis develops as the disease progresses, leading to breathing difficulties. Inhalation of beryllium compounds has caused lung cancer in rats and monkeys.  $UR_i$  was derived based on epidemiological study despite some limitations to the study (IRIS, 1997). Risk estimates were derived based on a range of estimated exposure times and concentrations.

Toxic effects in humans from ingesting beryllium have not been reported, probably since very little beryllium is absorbed from the gastrointestinal tract. Toxicity of ingested beryllium in laboratory animals is limited. Rats fed diets containing from 10 to 240 mg/kg/day of beryllium carbonate developed rickets (ATSDR, 1991). An oral CSF was developed from a drinking-water study using rats. Although the study did not

show a statistically significant increase in tumors, it was used because it was the only study available that used an oral exposure route. Oral CSFs derived by extrapolation from inhalation or intravenous exposure routes reportedly are within an order of magnitude (IRIS, 1997).

#### **5.2.3.5 Cadmium**

Cadmium bioaccumulates in humans, particularly in the kidney and liver (USEPA, 1985). Chronic oral or inhalation exposure of humans to cadmium has been associated with renal dysfunction, itai-itai disease (bone damage), hypertension, anemia, endocrine alterations, and immunosuppression. Renal toxicity occurs in humans at a renal cortex concentration of cadmium of 200 micrograms per gram (ug/g) (USEPA, 1985). In experimental animals, cadmium induces injection-site sarcomas and testicular tumors. When administered by inhalation, cadmium chloride is a potent pulmonary carcinogen in rats. Cadmium is a well documented animal teratogen (USEPA, 1985).

USEPA (IRIS, 1997) has classified cadmium as a B1 agent (probable human carcinogen). This classification applies to agents for which there is limited evidence of carcinogenicity in humans from epidemiologic studies. UR<sub>i</sub> of 0.0018 cubic meters per microgram (m<sup>3</sup>/ug) has been derived from cadmium based on epidemiologic studies. Using renal toxicity as an endpoint, an RfD of  $1 \times 10^{-3}$  mg/kg/day has been derived (IRIS, 1997) for exposures to cadmium in soil.

#### **5.2.3.6 Chromium**

The toxicity of chromium depends on the valence state of the compound. Hexavalent chromium is more toxic than trivalent chromium, which is an essential nutrient for fat and sugar metabolism. Ingestion of large amounts of hexavalent chromium salts can damage the digestive tract, kidneys, and liver. Occupational exposure to hexavalent chromium has been associated with lung cancer, skin ulceration,

allergic dermatitis, and anemia. Laboratory studies also indicate that hexavalent chromium is mutagenic. Trivalent chromium does not cause these effects. As a conservative measure, all chromium is assumed to be hexavalent in this risk assessment. Toxicity values discussed below apply to hexavalent chromium.

The RfD was derived from a 1-year drinking study in rats. The NOAEL was 2.4 mg/kg/day (derived from a concentration of 25 mg/L of potassium chromate in drinking water). No concentrations higher than 25 mg/L were given; therefore, a LOAEL was not identified. An uncertainty factor of 500 was used to derive the RfD of 0.005 mg/kg/day. Factors of 10 were used to compensate for interhuman and interspecies variability in sensitivity, and a factor of 5 was used to compensate for less than lifetime exposure. Confidence in the RfD was rated as low because of the small number of animals used in the study, small number of parameters measured, failure to identify a LOAEL, poor quality of supporting studies, and insufficient data for teratogenic or reproductive endpoints.

Inhalation of hexavalent chromium compounds may cause lung cancer; however, ingested hexavalent chromium is not considered to be carcinogenic. The inhalation unit risk factor of  $1.2 \times 10^{-2}$  m<sup>3</sup>/ug was derived from occupational epidemiological studies. Dose-response relationships for chromium exposure and lung cancer have been consistent across several studies (IRIS, 1997).

#### **5.2.3.7 Lead**

Lead is known to cause many toxic effects depending on the exposure circumstances. The principal toxic effects include damage to the nervous system, blood-forming system, kidneys, and reproductive system. Some lead compounds have caused kidney cancer in rats and mice; however, data are insufficient to determine if lead causes cancer in humans. The fetus and young children are particularly susceptible to lead because of greater absorption and sensitivity of the developing nervous system. Lead

exposure can cause decreased mental ability, premature birth, and reduced growth rates in children. For adults, an increase in blood pressure is one of the most sensitive effects.

Risk assessment for lead does not rely on the standard toxicity values (RfDs and CSFs); instead, the USEPA (1996b) has developed various models which are used to predict levels of lead in the blood following various exposures. These models were designed to protect the fetus and young children as the most sensitive receptors. Current data indicate that children may be affected by lead at blood lead levels of 10 micrograms per deciliter (ug/dL) of blood or lower, which, historically, is below average "background" levels in the general population. Severe brain damage, anemia, and kidney damage can occur when blood lead levels exceed 80 ug/dL in children or 80 to 100 ug/dL in adults (Goyer, 1991). Damage to the peripheral nervous system can occur at concentrations of 40 ug/dL, and concentrations greater than 30 ug/dL may permanently lower intelligence quotient (I.Q.) scores of children. The nervous system of the developing fetus may be damaged at concentrations in the 10 to 15 ug/dL range.

#### **5.2.3.8 Mercury**

In humans, elemental and inorganic mercury are absorbed following inhalation exposure but are poorly absorbed following oral exposure (ATSDR, 1997). Occupational exposure of workers to elemental mercury vapors ( $0.1$  to  $0.2 \text{ mg/m}^3$ ) has been associated with mental disturbances, tremors, and gingivitis (ATSDR, 1997). The central nervous system is a major target for organic mercury compounds. Adverse effects in humans from exposure to organic mercury compounds have included destruction of cortical cerebral neurons, damage to Purkinje cells, and lesions of the cerebellum. Clinical symptoms following exposure to organic mercury compounds have included paresthesia, loss of sensation in extremities, ataxia, and hearing and visual impairment (World Health Organization [WHO], 1976). A primary target organ for inorganic compounds is the kidney. Human exposure to inorganic mercury compounds has been associated with anuria, polyuria, proteinuria, and renal lesions (Hammond and Beliles, 1980).

Embryotoxic and teratogenic effects, including malformations of the skeletal and genitourinary systems, have been observed in animals exposed to organic mercury (ATSDR, 1997). Both organic and inorganic compounds are reported to be genotoxic in eukaryotic systems (Leonard et al., 1984).

USEPA has categorized mercury as a Class D agent. This classification applies to those agents for which there is inadequate evidence of carcinogenicity in animals. The RfD for inorganic mercury is under review by USEPA. The inhalation RfC for inorganic mercury is  $3 \times 10^{-4}$  mg/m<sup>3</sup>.

#### **5.2.3.9 Nickel**

Nickel from refinery dust has been classified as a Class A human carcinogen by the USEPA. Numerous studies have proven a statistically significant increase in nasal and lung cancers for workers exposed to nickel dust. Although animal studies have not been as conclusive (some species of rats and mice show no response), some studies have shown increased incidents of sarcomas. The inhalation UR<sub>i</sub> for nickel as refinery dust is  $2.4 \times 10^{-4}$  m<sup>3</sup>/ug. The oral RfD for nickel is based on decreased body weight for rats exposed to nickel (as soluble salts). An uncertainty factor of 300 is related with the oral RfD of 0.02 mg/kg/day, and confidence is medium.

#### **5.2.3.10 Selenium**

There is no evidence that selenium is carcinogenic in humans (IRIS, 1997). Selenium has been tested by the oral route in experimental animals, but the available data are insufficient to allow unequivocal evaluation of its carcinogenic potential. However, recent reports suggest that selenium is not carcinogenic. Several studies have shown that selenium may actually reduce the incidence of tumors under certain conditions.

Selenium is an essential element in animals and humans (ATSDR, 1997). However, exposure to amounts only slightly above the required levels can produce acute and chronic toxic effects. Acute toxicities of selenium compounds vary greatly, while the chronic effects of most forms are similar. Exposure may be by oral, inhalation, or dermal routes, and effects in humans and experimental animals are similar. Acute effects include degeneration of the liver, kidneys, and myocardia; hemorrhages in the digestive tract; and brain damage. Eye, nose, and throat irritation also may occur with inhalation exposure. The acute oral lethal dose (LD<sub>50</sub>) value of sodium selenite in rats was approximately 10 mg/kg. Chronic toxicity in humans appears to occur only in areas where foods containing excessive concentrations of selenium are ingested. Signs of chronic intoxication include depression, nervousness, dermatitis, gastrointestinal disturbances, dental caries and discoloration, lassitude, and partial loss of hair and nails.

#### **5.2.3.11 Zinc**

Zinc (Zn) is an essential nutrient, with a recommended daily allowance of 5 to 15 milligrams per day (mg/day). However, large doses seem to produce copper deficiency anemia. A 10-week study of women taking 50 mg Zn/day resulted in a decrease of erythrocyte superoxide dismutase (ESOD), a decline in ferritin and hematocrit values, and an increase in zinc serum. The same study in men also showed a decrease in ESOD. People with sickle cell anemia exposed to zinc experience copper deficiency. Zinc does seem to lower high density lipid (HDL) cholesterol.

Carcinogenic studies for zinc are inadequate, and the USEPA has identified zinc as not classifiable as to human carcinogenicity. Some laboratory studies indicate an increase in hepatomas in mice exposed to zinc in drinking water. Some fowl have developed testicular testoma when injected with 0.01 grams (g) of zinc acetate or zinc stearate.

### 5.3 EXPOSURE ASSESSMENT

Exposure assessments typically rely on standard default assumptions developed by USEPA or state regulatory agencies because actual exposure data typically are not available and are difficult to obtain. Because of this fact, there is a great deal of uncertainty associated with exposure estimates. In order to compensate for this uncertainty, reasonable maximum exposure (RME) assumptions are used. The RME is defined as the maximum exposure that is reasonably expected to occur at the site; therefore, actual exposures are likely to be less than the RME. Standard default exposure assumptions have been developed for residential and industrial exposure scenarios. However, site-specific data and professional judgment also are important components of the exposure assessment. Both were incorporated in the risk assessment.

#### 5.3.1 Exposure Setting

SWMU 23 was used to store waste materials from the BTF and Chemical Manufacturing Plant; SWMUs 24 and 39 were used to store waste materials from the former Blast Furnace Plant; and SWMU 38 was used to store construction debris, soil from excavation activities, and other debris. The SWMUs are in a relatively isolated portion of the entire Facility. Activities at the Land Disposal Areas range from waste mining to nothing. SWMU 23 is not visited on a regular basis by Sloss workers. The use of these SWMUs is not expected to change for the foreseeable future. Activity on the site is limited to site workers, and site access is controlled by a locked gate and 24-hour guard. The surrounding property is mixed industrial and residential. Groundwater is not used as a water supply on the site or in the site vicinity. Surface water on the site is limited to a drainage ditch along the eastern property boundary; storm water drainage ditches along Summit Street, the polishing pond (SWMU 22) just north of SWMU 24; and the Stormwater Runoff Sewer (SWMU 25) west of SWMU 38. SWMUs 22 and 25 will be investigated as part of the BTF and Sewers RFI.

### **5.3.2 Conceptual Site Exposure Model**

The conceptual site exposure model provides the framework of the risk assessment. It characterizes the exposure setting, identifies sources and transport pathways for the COCs, identifies potential receptors for current and future land uses, and identifies the primary exposure routes (Figure 5-1). Receptors may include any living organism (human, plant, or animal). Exposure routes include the basic pathways through which a COC may be absorbed (inhalation, oral ingestion, or dermal contact).

An exposure pathway evaluation is a key component of a risk-based analysis. Exposure can occur only when the potential exists for a receptor to directly contact released constituents or if there is a mechanism for released constituents to be transported to a receptor. Each component (released constituents, mechanism of transport, point of contact, and presence of a receptor) must be present for a complete exposure pathway.

This report focuses on the SWMUs (23, 24, 38 and 39) associated with the Land Disposal Areas that are located at the northern portion of the Sloss Facility. The Sloss Facility currently manufactures foundry and furnace coke through the process of carbonization at the Coke Manufacturing Plant, TSA and BSC at the Chemical Manufacturing Plant, and mineral wool. Access is controlled by a fence and gate which is manned by security guards 24 hours per day.

SWMUs in the Land Disposal Areas are not used currently for disposal of plant wastes, and there are no plans to reuse these portions of the Sloss property. SWMU 23 is isolated and overgrown; no one contacts the material stored there. The sludge from SWMU 24 is being mined and sold as product and SWMU 39 will be mined in the future. A metals recovery operation was performed on SWMU 38 and the landfill is still being used for disposal of construction debris and soil from excavation activities. Site workers, including construction or excavation workers, may be exposed to COCs in surficial soils, subsurface soil, sludge, and ambient air. Incidental ingestion, dermal contact, and



inhalation of dust and vapors are the exposure routes, with the exception of beryllium. Beryllium is not absorbed through intact skin (ATSDR, 1997); therefore, assessing dermal contact with beryllium is not appropriate. Off-site transport of the COCs is expected to be minimal compared with on-site concentrations; therefore, on-site workers represent the receptors with the greatest exposure potential.

Groundwater exposure is not evaluated in this risk assessment because it is not used as a potable water supply at the site or in the surrounding area. The area is supplied with water by the municipal water district.

#### **5.3.2.1 Release Sources and Release Mechanisms**

The release sources and release mechanisms can be divided into two groups: primary and secondary. Primary release sources are those sources that initially release the COC(s). Secondary release sources are those sources that were impacted by the primary source and can cause an additional release of the COC(s). Potential release sources include the SWMUs identified at the Land Disposal Areas.

The soil and sludge from each SWMU are potential sources of release to the air and surrounding soil. Particulates and vapors that contain the COCs from operations are released into the atmosphere where they then have the potential of settling to the surficial soil or may be transported off-site. Surficial soil usually is defined as the soil between land surface and 1 foot below land surface (bls). Once in the surficial soil, the COC may either migrate into the subsurface soil and subsequently leach into the groundwater or be released via vapors and dust into the atmosphere. The concentrations of constituents detected in groundwater are relatively low, indicating the subsurface migration to groundwater pathway is not significant. The physical and chemical properties influencing constituent migration are presented in Table 5-20.

### **5.3.2.2 Exposure Points, Exposure Routes, and Receptors**

Exposure points are the specific locations where a receptor may contact constituents in soil, groundwater, or other environmental media. Impacted surficial and subsurface soil and sludge at the Land Disposal Areas are the exposure points. As previously discussed, groundwater is not considered an exposure point. There are no water-supply wells within the vicinity of the site. The residential area located next to the Facility is on a municipal water supply; therefore, it is highly unlikely that the shallow groundwater would ever be used as a water supply in the future near the site. Therefore, groundwater is not considered an exposure pathway of concern for the Land Disposal Areas.

It is anticipated that on-site exposure routes under current and future conditions will be limited to site workers. Exposure routes examined include incidental ingestion, dermal contact, and inhalation of dusts and vapors. Contact with subsurface soil in the SWMUs would occur only if future construction projects were conducted in these areas.

Off-site residents may be exposed to the constituents in soil via inhalation. Due to the distance to the nearest residence and the expected low releases to air due to the extensive cover over the area, off-site residential exposure is expected to be minimal compared to potential on-site worker exposure. Therefore, off-site resident inhalation is not considered an exposure pathway of concern for the Land Disposal Areas. The potential exists for birds and small terrestrial animals to be exposed to the COCs in soil via ingestion; however, the industrial nature of the site is a limiting factor for ecological receptors.

### **5.3.3 Exposure Assumptions**

Standard exposure assumptions (USEPA, 1989b; 1996a) for industrial workers were used in this risk assessment for the Land Disposal Areas. These values are

summarized in Table 5-21. No specific guidance has been developed regarding exposure frequency and exposure duration for an excavation worker. Therefore, professional judgment was used. The excavation worker exposure scenario is based on a construction project that lasts 18 weeks (90 working days). Work is conducted 8 hours per day, 5 days per week.

Site workers are assumed to come in contact with impacted surficial soil (0 to 1 foot bls) and sludge in SWMU 24 and SWMUs 38 and 39 for 8 hours per day, 250 days per year, over a 25-year period (USEPA, 1989b; 1996a). Actual exposures under current conditions are expected to be much less than assumed in this risk assessment because workers do not spend 8 hours per day at either of the SWMUs. SWMU 23 is not active; therefore, site workers are assumed to come in contact with sludge in SWMU 23 only during periodic inspections of the SWMU. Inspections were assumed to last 2 hours per day, 12 days per year (once a month), over a 25-year period.

The EPCs for surficial soil, subsurface soil, and sludge, based on log-normal data distribution, are presented in Tables 5-1 through 5-6, as identified in the USEPA Region IV (1996a) guidance. The physical-chemical properties used to evaluate exposure are included in Table 5-20. Table 5-22 presents equations used to evaluate exposure and risk.

## **5.4 RISK CHARACTERIZATION**

Risk characterization summarizes and combines information from the toxicity assessment and exposure assessment to derive quantitative or qualitative risk estimates. Risk estimates for the Land Disposal Areas are discussed in the following section.

### **5.4.1 Non-Carcinogens**

Quantitative estimates for non-carcinogenic effects are called HQs. The HQ is the ratio of the estimated average daily exposure dose and the RfD for oral and dermal

exposures, and the ratio of the estimated air concentration and the RfC for inhalation exposures. An HQ greater than 1 indicates only that the estimated exposure exceeds the RfD or RfC. It does not provide the probability of an adverse effect. Although an HQ greater than 1 indicates that the estimated exposure dose for that constituent exceeds the RfD or RfC, it does not necessarily imply that adverse health effects will occur. It is important to remember that all RfDs and RfCs and, consequently HQs, are not equal. The basis for the RfD/RfC and the confidence level should be considered in risk management decisions. The HQs are added to derive the hazard index (HI). Current regulatory methodology (USEPA, 1989b; 1996a) advises summing HIs across exposure routes for all media at the site to derive a "Total Site Hazard Index." If the total HI exceeds 1, COCs may be grouped according to critical toxic effects, and HIs may be calculated separately for each effect (USEPA, 1989b; 1996a).

#### **5.4.2 Carcinogens**

Quantitative estimates for carcinogenic effects are obtained by calculating the excess lifetime cancer risk (ELCR). Estimated average daily doses, or intakes, for each constituent are averaged over the expected lifetime of 70 years. The ELCR, equal to the product of the exposure dose and CSF or air concentration and the UR, is estimated for each known, probable, or possible carcinogenic COC in each medium. The ELCR values provided in this report are an indication of the increased risk, above that applying to the general population, which may result from the exposure scenarios described in the Exposure Assessment section (Section 5.3). The risk estimate is considered to be an upperbound estimate; therefore, it is likely that the true risk is less than that predicted by the model. Current regulatory methodology assumes that ELCRs can be summed across routes of exposure and COCs to derive a "Total Site Risk" (USEPA, 1989b; 1996a). The USEPA has defined a target ELCR range of  $1 \times 10^{-6}$  to  $1 \times 10^{-4}$  (USEPA, 1996a). Risk levels within or below this range generally do not require remediation.

### 5.4.3 RME Risk Estimates

Site worker exposure was calculated for exposure to sludge for SWMUs 23, 24, and 39, and was calculated for exposure to surficial soil for SWMU 24. Construction worker exposure was calculated for exposure to subsurface soil in SWMU 23 and SWMUs 38 and 39. Surficial soil and sludge data were used to evaluate current exposure conditions for site workers, and subsurface soil data were used to evaluate future conditions for construction workers. The equations used in the calculations are presented in Table 5-22.

The ELCR and HI for site worker exposure to sludge in SWMU 23 (Table 5-23) were  $1 \times 10^{-5}$  and 0.01, respectively. The major contributor to the ELCR is benzo(a)pyrene. The ELCR and HI for construction worker exposure to subsurface soil in SWMU 23 (Table 5-24) were  $8 \times 10^{-7}$  and 0.1, respectively. The ELCR for site worker exposure is within the target range of  $1 \times 10^{-6}$  to  $1 \times 10^{-4}$ , and the ELCR for construction worker exposure is below the target range. The HIs for both site worker and construction worker exposure are below the target of 1.

The ELCR and HI for site worker exposure to surficial soil in SWMU 24 (Table 5-25) were  $4 \times 10^{-5}$  and 0.2, respectively. The major contributor to the ELCR is benzo(a)pyrene. The ELCR and HI for site worker exposure to sludge in SWMU 24 (Table 5-26) were  $2 \times 10^{-6}$  and 0.6, respectively. The major contributor to the ELCR is beryllium. The ELCRs are within the target range of  $1 \times 10^{-6}$  to  $1 \times 10^{-4}$ , and the HIs are below the target of 1.

The ELCR and HI for site worker exposure to sludge in SWMU 39 (Table 5-27) were  $2 \times 10^{-6}$  and 0.5, respectively. The main contributor to the ELCR is beryllium. The ELCR and HI for construction worker exposure to subsurface soil in SWMUs 38 and 39 (Table 5-28) were  $8 \times 10^{-8}$  and 0.0003, respectively. The ELCR for site worker exposure is within the target range of  $1 \times 10^{-6}$  to  $1 \times 10^{-4}$ , and the ELCR for a construction worker is

below the target range. The HIs for both site worker and construction worker exposures are below the target of 1.

## 5.5 RISK-BASED REMEDIAL GOAL OPTIONS

Risk-based remedial goal options (RGOs) are provided in this section for the exposure scenarios where the ELCR exceeded  $1 \times 10^{-6}$ . RGOs for non-carcinogenic risks are unnecessary because all of the HQs and HIs were below 1. RGOs are presented at target risk levels corresponding to  $10^{-4}$ ,  $10^{-5}$ , and  $10^{-6}$  according to USEPA (1996a) guidelines. The RGO equations are presented in Table 5-29.

RGOs for exposure to COCs in sludge in SWMU 23 are presented in Table 5-30. RGOs for COCs in SWMU 24 and SWMUs 38 and 39 are presented in Table 5-31, with the exception of lead. Lead does not have a RfD or CSF because risks from lead exposure are better evaluated by predicting the associated blood lead level. The approach used here relates intake of lead from soil to blood lead concentrations in women of child-bearing age (USEPA, 1996b). Because the fetus and young children are much more susceptible to lead toxicity than adults, an RGO is developed which protects the fetus as described below.

The USEPA model assumes that the increase in blood lead from exposure to soil lead is linear. A linear biokinetic slope factor was developed for the model. It is based on available data relating fetal blood lead levels to maternal blood lead levels and soil exposure. In the guidance, USEPA (1996b) states that the basis for the RGO is the assumption that “fetuses and neonates can be adversely affected by elevated maternal blood lead concentrations, and that risk to the fetus can be estimated from the probability distribution of fetal blood lead concentrations.” The baseline maternal blood lead concentrations were estimated based on the background blood lead level in the general population which ranges from about 1.7 to 2.2 ug/dL. The highest acceptable fetal blood lead level was set at be 10 ug/dL, the recommended concentration from the USEPA and

the Centers for Disease Control (CDC). From the equations shown in Table 5-32, an RGO for lead of 1,400 mg/kg was calculated.

EPCs for each SWMU are included in Tables 5-30 and 5-31. In comparing the EPCs with the calculated RGOs, none of the constituent EPC concentrations exceeded the RGO at a  $1 \times 10^{-4}$  risk level. Only the benzo(a)pyrene EPC concentrations exceeded a  $1 \times 10^{-5}$  risk level. The benzo(a)pyrene EPC in SWMU 24 surficial soil is 7.3 mg/kg, while the RGO is 2.4 mg/kg. The RGO concentrations that exceed the EPCs are highlighted in each table. The lead EPC is above the calculated RGO for sludge in SWMU 24.

## 5.6 UNCERTAINTIES

### 5.6.1 Sources of Uncertainty

The risk estimates presented here are conservative estimates of the risks associated with exposure to constituents detected in soil at the site. In general, conservative assumptions were made in the risk assessment process to bias the risk assessment towards protectiveness. However, uncertainty is inherent in the risk assessment process, and a discussion of these uncertainties is presented in this section. Each of the three basic building blocks for risk assessment (monitoring data, exposure scenarios, and toxicity values) contribute uncertainties.

Uncertainty always exists when using a finite set of monitoring data to represent site conditions. Because of this uncertainty, the UCL or maximum detected concentration was used to represent the EPC for each constituent in each medium. This conservative approach should bias the risk estimates to overestimate actual risks that might be associated with the site. In addition, it was assumed that the constituent concentrations remain constant throughout the relevant exposure periods, ignoring natural attenuation processes that should tend to decrease the concentrations over time. This

conservative assumption is expected to generate highly protective (elevated) risk estimates.

Environmental sampling itself introduces uncertainty. This source of uncertainty can be reduced through a well-designed sampling plan, use of appropriate sampling techniques, and implementation of laboratory data validation and quality assurance/quality control (QA/QC). The data used in this report meet QA/QC requirements and are appropriate for use in a risk assessment. Although only a few samples were collected at each SWMU, the samples were collected in areas near the potential release sources and should generally reflect the highest concentrations. Again, this sampling bias should overestimate risk.

Exposure scenarios also contribute uncertainty to the risk assessment. Exposures were calculated based on the assumption that the current conditions would remain stable (i.e., no attenuation) throughout the exposure period. This assumption can produce uncertainties because natural attenuation processes are expected to substantially reduce constituent concentrations over time. Exposure scenarios were developed based on site-specific information, USEPA exposure guidance documents, and professional judgment. Although uncertainty is inherent in the exposure assessment, the exposure assumptions also were chosen to err on the side of conservatism (i.e., to be over protective).

The toxicity values and other toxicological information (i.e., health effects) used in this report are associated with significant uncertainty. Many toxicity values are developed using results of studies in which laboratory animals are exposed to high doses. Although species differences in absorption, distribution, metabolism, excretion, and target organ sensitivity are well documented, available data are not sufficient to allow compensation for these differences. Most laboratory studies strictly control as many factors as possible, yet the human population is genetically diverse and affected by a variety of diets, occupations, pharmaceuticals, and other factors. When human epidemiological data are available, a



different set of uncertainties is present. For instance, exposure dose is seldom well characterized in epidemiological studies.

Recent research on the mechanisms of carcinogenesis suggests that USEPA's use of the linearized multistage model may overestimate the cancer risks associated with exposure to low doses of chemicals (USEPA, 1996c). At higher doses, many chemicals cause large-scale cell alteration which stimulates replacement by cellular division. Dividing cells are more subject to mutations than quiescent or non-dividing cells; thus, there is an increased potential for tumor formation. It is possible that administration of these same chemicals at lower doses would not increase cell division and thus would not increase mutations. This would suggest that the current methodology may overestimate cancer risk, particularly given the low doses found at the site.

Toxicity values were not available from the USEPA for all of the COCs in media at the site. The USEPA is in the process of developing inhalation toxicity values; however, these currently are not available for most constituents. Surrogate compounds were selected to represent the toxicity values for some constituents lacking values if an appropriate surrogate was available. In the absence of subchronic RfDs, chronic RfDs were used.

### **5.6.2 Monte Carlo Analysis**

Monte Carlo Analysis is one method used to approach the uncertainty involved in the point-estimate or deterministic risk assessment. The Monte Carlo or probabilistic method of risk assessment was used in this report to calculate total cancer risks for the following site worker exposure scenarios:

- (1) site worker exposure to sludge for SWMU 23;
- (2) site worker exposure to surficial soil for SWMU 24;
- (3) site worker exposure to sludge for SWMU 24; and
- (4) site worker exposure to sludge for SWMU 39.

These scenarios were selected for the Monte Carlo Analysis because the total excess lifetime cancer risks from the deterministic (i.e., point estimate) calculations exceeded the lower end ( $1 \times 10^{-6}$ ) of the range of acceptable risk values ( $10^{-6}$  to  $10^{-4}$ ). Only the cancer risks were included in the Monte Carlo Analysis since the deterministic non-cancer risks were all acceptable (i.e., HI less than 1). The following sections provide a brief description of Monte Carlo Analysis and present the exposure parameters used in the calculations.

Monte Carlo simulation is a tool which was developed by physicists over 50 years ago and has long been used by scientists and engineers in many fields. Application of Monte Carlo simulation produces a probability distribution for a modeled parameter based on the probability or uncertainty distributions for the input variables. To run a Monte Carlo simulation, an appropriate probability density function (PDF) must be defined for each selected input variable (termed the random variables) for the model. A random number generator is used to select a value for each random variable using the input PDF information. Using the selected combination of values for the random variables, a single forecast value is calculated. This process of selecting a set of random variable values and calculating the forecast value is repeated for many iterations (usually 3,000 or more). The frequency distribution for the calculated forecast values represents the probability distribution for the modeled forecast value. A total of 10,000 iterations was used in each Monte Carlo simulation for this site.

In the context of risk assessment, the forecast value of interest is the potential cancer or non-cancer risk (ELCR or HQ, respectively) related to hypothetical exposure scenarios at a particular site. The input random variables are the exposure parameters used to model the potential exposure conditions. In the derivation of a RME point-estimate of the risk (as is usually presented in a risk assessment), the input values for the exposure parameters are selected such that the point-estimate is intended to represent the 95<sup>th</sup> percentile for the risk (USEPA, 1989b). However, the combination of several highly conservative input values into a single RME calculation of risk (multiplying several

worst-case values and dividing by average values) typically overestimates any actual risks likely to be associated with exposure at the site. In addition, this RME point-estimate (i.e., deterministic) approach provides no method of determining the extent to which the actual risk has been overestimated. Monte Carlo simulation is a valuable tool for obtaining a risk probability distribution which can be used to better estimate the 95<sup>th</sup> percentile for risk and to determine appropriate confidence limits for the risk and indicate the uncertainty associated with the modeled risk values.

#### **5.6.2.1 Input Random Variable Probability Distributions**

This section presents the data distributions defined for each of the random variables in the Monte Carlo simulation. The relevant exposure model is the site worker exposure to soil or sludge. This exposure model considers the oral, dermal, and inhalation pathways. Table 5-33 summarizes the input PDFs for the selected random variables. The following paragraphs discuss the source of each input PDF.

##### Averaging Period and Exposure Period

In the Monte Carlo calculation of cancer risk (ELCR), the averaging period (AP) was not treated as a random variable; the value was held constant at 70 years. The AP for cancer effects was not considered a random variable since the derivation of the CSFs is based upon a 70-year lifetime. Although the AP is constant, the exposure period (EP) will vary and was defined as a random variable for the Monte Carlo Analysis.

Percentile data for the site worker exposure period PDF were obtained from the literature (Finley et al., 1994; American Industrial Health Council [AIHC], 1994):

Minimum = 0

Maximum = 30 years

25th percentile of 1 year

50th percentile of 3.8 years

75th percentile of 11 years

90th percentile of 19 years

95th percentile of 25 years

These percentile data are based on Bureau of Labor Statistics information on the working tenure for U.S. workers. The mean of the values used for the exposure period in the Monte Carlo simulations was reported as approximately 7 years.

### Body Weight

The adult body weight (BW) PDF represents adult male data presented in the USEPA *Exposure Factors Handbook* (USEPA, 1995) into a cumulative distribution with the following parameters:

Minimum = 51 kg	Maximum = 107 kg	(AIHC, 1994)
5 <sup>th</sup> percentile of 58.6 kg		
10 <sup>th</sup> percentile of 62.3 kg		
15 <sup>th</sup> percentile of 64.9 kg		
25 <sup>th</sup> percentile of 68.7 kg		
50 <sup>th</sup> percentile of 76.9 kg		
75 <sup>th</sup> percentile of 85.6 kg		
85 <sup>th</sup> percentile of 91.3 kg		
90 <sup>th</sup> percentile of 95.7 kg		
95 <sup>th</sup> percentile of 102.7		

The BW and exposed skin surface area (SSA) variables were correlated with one another using a correlation coefficient of 0.85 (selected based on professional judgment). This large positive correlation coefficient is intended to account for the fact that individuals with high BW values are expected to also have high SSA values, while low SSA is expected to correspond with low BW.

### Exposure Frequency

The exposure frequency (EF) for the site worker was based on the PDF cited for residential exposure (triangular distribution with a minimum of 180 days/year, a most likely value of 345 days/year, and a maximum value of 365 days) (Smith, 1994). This residential PDF was multiplied by a factor of 5/7 (based on 5 workdays per 7-day week) and reducing the maximum value by 5 to account for 5 holidays per year, resulting in a triangular distribution with minimum of 130 days/year, most likely value of 240 days/year, and maximum of 255 days/year.

### Exposure Point Concentration

The constituent EPCs were defined based on the analytical data presented in Section 5.1.1. For all but one scenario, no PDFs were defined for the EPCs; rather, the software was set to randomly select one of the actual measured or modeled concentration values with each iteration of the Monte Carlo simulation (a process referred to as bootstrapping). The selection probability for each measured or modeled concentration value was determined by the frequency with which that value appears in the dataset. For the site worker exposure to surficial soil (the scenario with the highest total ELCR), the data for benzo(a)pyrene, benzo(a)anthracene, dibenzo(a,h)anthracene, and indeno(1,2,3-c,d)pyrene were fit to a log-normal distribution using the Crystal Ball<sup>R</sup> software. These constituents were selected because they each had ELCRs exceeding  $1 \times 10^{-6}$ , and it was intended that the log-normal distribution would give a more complete representation of the data.

### Exposure Time

Based on professional judgment, the daily exposure time PDF for the site worker was input as a triangular distribution, ranging from 0 to 9 hours/day, with 8 hours/day as the most likely value.

### Skin Surface Area

The exposed SSA PDF for the Monte Carlo simulation was derived based upon data presented in the USEPA *Exposure Factors Handbook* (USEPA, 1995; Kissel et al., 1996) which presents the SSA percentile data for men and women and recommends that for outdoor exposures in areas of moderate temperature, the assumption that 5 percent of the total body SSA is exposed during winter months, 10 percent in the spring and fall, and 25 percent in the summer months. This is a conservative assumption since workers are unlikely to wear shorts, which is assumed in the 25 percent value for the summer months. Assuming 3 months per season, this results in an SSA PDF which is 0.125 multiplied by the PDF for total body SSA (Normal, with Mean = 19,700 square centimeters (cm<sup>2</sup>), standard deviation = 1,900 cm<sup>2</sup>). Thus, the input PDF for SSA was NORMAL, with a mean of 2,460 cm<sup>2</sup> and a standard deviation of 240 cm<sup>2</sup>. As stated previously, the BW and SSA variables were correlated with one another using a correlation coefficient of 0.6 (based on professional judgment).

### Soil Adherence Rate

The PDF for soil adherence rate (SAR) was derived based on data from Kissel et al. (1996), as presented by USEPA (1995). Kissel measured soil loading on the skin of the hands, arms, face, and feet of people engaged in a variety of activities. For this site, data for 5 groups of groundskeepers (a total of 29 individuals) were used to conservatively represent site worker activity. It was assumed that the hands, forearms, and head would be exposed, and the SAR data reported by Kissel et al. (1996) were area-averaged using the relative areas of the three body parts and the SAR values reported for each. Using this input in a Monte Carlo Analysis resulted in a PDF which was approximately normal with a mean of 0.03 milligrams per square centimeter ( $\text{mg}/\text{cm}^2$ ) and a standard deviation of  $0.003 \text{ mg}/\text{cm}^2$ .

### Soil Ingestion Rate

The site worker soil ingestion rate was derived from data for adult soil ingestion. Based on the default soil ingestion rate point estimate value of 100 mg/day for adults vs. the default point estimate value of 50 mg/day for a site worker (USEPA, 1991), the cumulative probability data reported in the *Exposure Factors Sourcebook* (AIHC, 1994) was reduced by a factor of 1/2:

Minimum = 0                      Maximum = 108 mg/day  
 67 percent probability less than or equal to 8.5 mg/day  
 83 percent probability less than or equal to 74 mg/day

#### **5.6.2.2 Monte Carlo Results**

A Monte Carlo simulation of total ELCR was run using the input random variable PDFs described in the previous section and presented in Table 5-33. The forecast probability density curves for total ELCR are shown in Table 5-34. The median (50th

percentile), mean, and 95th percentile for the ELCR forecast probability density curves are presented below:

**Total ELCR**  
**(Monte Carlo Results)**

<u>Exposure</u> <u>Medium</u>	<u>Median</u>	<u>Mean</u>	<u>95<sup>th</sup> %</u>
SWMU 23 Sludge Waste	3E-08	2E-07	9E-07
SWMU 24 Sludge Waste	4E-08	2E-07	1E-06
SWMU 24 Surficial Soil	8E-08	5E-07	2E-06
SWMU 39 Sludge Waste	1E-08	9E-08	4E-07

The 95<sup>th</sup> percentile values all lie below or slightly exceed the lower end of the range of acceptable cancer risk ( $10^{-6}$  to  $10^{-4}$ ); the median and mean values all lie below this level. Typically, the median value is used to represent average exposure conditions while the 95<sup>th</sup> percentile is used to represent RME conditions. Based on these results, the site does not pose unacceptable cancer risk under the assumed exposure conditions.

## 5.7 ECOLOGICAL RISK ASSESSMENT

The objective of the ecological risk assessment (ERA) is to determine whether constituents detected at SWMU 23, SWMU 24, and SWMUS 38 and 39 have the potential to adversely affect the ecosystem at these SWMUs or surrounding areas. The standard paradigm for predictive ERA, as presented in the USEPA Framework for Ecological Risk Assessment (USEPA, 1992), the USEPA Region IV Supplemental Guidance to RAGs (USEPA, 1996a), and the Ecological Risk Assessment Guidance for Superfund (USEPA, 1997c), was adapted to the ecological assessment of the site.



The first step of the ERA is problem formation which discusses site characteristics, selection of constituents of ecological concern (COECs), endpoints and measurements for the assessment, and potential receptor populations. The second step is the exposure assessment which evaluates the relationship between ecological receptors and affected media at the site. The third step of the ERA is the effects assessment which discusses available toxicity data for COECs. The fourth step of the ERA is the risk characterization which integrates the results of the exposure assessment and effects assessment to estimate risks to potential ecological receptors

### **5.7.1 Problem Formation**

This section describes the relative ecological attributes of SWMUs 23, 24, 38, and 39, the selection of COECs, and the endpoints for the assessment. Potential sources of contamination are discussed in Section 5.3.2 (Conceptual Site Exposure Model).

#### **5.7.1.1 Environmental Description**

An ecological inventory (EI) was conducted at the site June 2 through June 4, 1997, to characterize the biotic resources associated with SWMUs 23, 24, 38, and 39 as part of the ongoing RFI. The objectives of the EI were to: (1) gather qualitative and semi-quantitative information on the ecological communities present at the site; (2) identify pathways by which biological receptors could be exposed to media containing site-related constituents; and (3) document any visible evidence of stress on biological receptors at the site. The findings of the EI are summarized below.

During the investigation, a survey of the terrestrial flora and fauna of the site was conducted. A limited survey of aquatic flora and fauna was conducted. No attempt was made to assemble a complete list of plant and animal life within the site; however, a representative list was compiled utilizing as many different plant and animal types and species as possible via sight and sound surveys. Survey evidence included plant and

animal sightings, animal calls, bird songs and calls, and animal droppings and tracks. Terrestrial and aquatic ecosystems and associated plant and animal species were visually observed for any signs of stress placed upon them by the site and/or human activities (i.e., land development), and/or by abnormal natural events such as drought or flooding.

To characterize biotic resources, each area was investigated. Identification of major vegetative communities and the species composition were recorded by written field notes. Photographs were taken to document field observations/conditions. Potential wetland areas were identified based on observed vegetation, soil, and hydrologic characteristics. All communities were characterized for their potential to support biota and observations of biotic communities and/or species which appeared stressed or unhealthy.

Plant species follow nomenclature found in Radford et al. (1968) and Petrides (1988), and animal species follow documentation in Mount (1975), Rhode et al. (1994), Stokes (1996), and Webster et al. (1985). Scientific nomenclature and common names (when applicable) are provided for each plant and animal species listed. Subsequent references to the same organism include the common name only. The presence of wetland habitats on site was determined using Cowardin et al. (1979), Environmental Laboratory (1987), and Wetland Training Institute, Inc. (1991).

During surveys, wildlife identification involved a variety of observation techniques: active searching and capture, visual observations (both with and without the use of binoculars), and identifying characteristic signs of wildlife (sounds, scats, tracks, burrows, etc.). Organisms captured during these searches were identified and released without injury. Equipment used for aquatic sampling included a hand-held dip net and minnow traps.

A variety of plant and animal species occur on the site and in the surrounding areas. SWMUs 23, 38, and 39 contain habitats potentially used by ecological receptors.

SWMU 24 consisted primarily of barren soil and is of an industrial nature such that limited useable habitat is present. Potentially complete exposure pathways for terrestrial animals include exposure to potentially impacted soils and/or sludges. Exposure routes may include direct contact and ingestion; volatilization is considered to be a minor exposure route. Based on qualitative observations, no adverse ecological effects were apparent at the site. The nearest surface-water body to the site is Five Mile Creek. Much of the storm-water runoff from the site drains to a large surface impoundment (polishing pond) before permitted discharge to Five Mile Creek. Therefore, limited potential exists for constituent migration pathways to aquatic receptors in the creek. No evidence was found during the site visit of stressed biota resulting from off-site migration. Specific information concerning the EI is summarized below.

#### 5.7.1.1.1 Physical Resources

Jefferson County is in the Appalachian Highlands major physical division of the United States. Birmingham is in the southeastern part of the county and lies in the Tennessee section of the Valley and Ridge physiographic province. This province is underlain by sedimentary bedrock deformed by folding and faulting. Horizontal compression of the bedrock produced a series of major folds, called anticlines and synclines. These folds were broken by major shear fractures, called thrust faults, causing portions of the folds to be displaced northwestward for several miles. During this period, approximately 200 million years ago, a series of long, narrow parallel valleys and ridges developed. The ridges have bedrock that are more resistant to erosion than material in the valleys. These valleys and ridges are oriented in a northeast-southwest direction (Spivey, 1982).

#### 5.7.1.1.1.1 Soil

The process of soil development depends upon both biotic and abiotic influences. These influences include past geologic activities, nature of parent material, environmental

and human influences, plant and animal activity, age of sediments, climate, and topographical position.

SWMUs 24, 38, and 39 are underlain by Urban Land, while SWMU 23 is underlain by the Allen-Urban land complex. Urban Land soils consist of areas covered by commercial, industrial, and high density residential facilities. These areas have been altered to achieve large areas that are nearly level, to avoid flooding or wetness problems, or to increase the load supporting capacity. The original soils were altered by cutting and filling, shaping and grading, excavating, blasting, compacting, or covering with concrete or asphalt. The Allen-Urban land complex consists of strongly sloping, well drained Allen soils and areas of Urban Land on mountain foot slopes and uplands of limestone valleys. The available water capacity of Allen soils is moderate to high. Permeability is moderate, and the shrink-swell potential is low. Surface runoff is moderately fast (Spivey, 1982).

#### *5.7.1.1.2 Water Resources*

Several unnamed tributaries are responsible for carrying the surface drainage off of the Sloss property. Two drainages, one west of SWMU 38 and one east of SWMU 39, carry surface runoff from these SWMUs into Five Mile Creek, located north of the property. The drainage west of SWMU 38, the Stormwater Runoff Sewer (SWMU 25), was established to carry stormwater runoff from the Sloss Facility and noncontact cooling water into a polishing pond before entering Five Mile Creek. The other drainage, adjacent to SWMU 39, flows into Five Mile Creek. SWMU 23 is primarily a ponded area. A pipe located along the southern dike drains this area. Surface runoff travels southward down the hill and eventually flows into the polishing pond. Surface runoff from SWMU 24 also flows into the polishing pond. A drain along the northern perimeter of the polishing pond diverts water directly into Five Mile Creek.

#### 5.7.1.1.2 Biotic Communities

This section describes the existing vegetation and associated wildlife that occur within the vicinity of SWMUs 23, 24, 38, and 39. Wildlife and other fauna are observed less easily than the flora of an area without special efforts by the investigators. The wildlife associated with the study area of the proposed project are divided into two sections: terrestrial fauna and aquatic life. Some taxa will often occupy both terrestrial and aquatic habitats. Descriptions of fauna likely to occur within the project area, based on the evidence available, are given below.

##### 5.7.1.1.2.1 SWMU 23

SWMU 23, known as the BTF Sludge Disposal Area, is located at the northwest part of the Sloss Facility. The unit received approximately 10 tons of biological sludge a day until 1993 when all disposal in the unit was discontinued. Currently, terrestrial plant communities within SWMU 23 are represented by two major community types: successional and wetland. A dense mat of vegetation covers the majority of the SWMU, which is approximately 2 acres in size. Seasonal ponding of water occurs.

Successional plant communities present along the rim and adjacent upland areas of SWMU 23 include several species of ragweed (*Ambrosia* spp.), goldenrod (*Solidago* sp.), pokeweed (*Phytolacca americana*), aster (*Aster* spp.), milkweed (*Asclepias* spp.), smooth sumac (*Rhus glabra*), dogfennel (*Eupatorium* sp.), mulberry (*Morus* sp.), black cherry (*Prunus serotina*), broomstraw (*Andropogon* sp.), morning-glory (*Ipomoea* sp.), birch (*Betula* sp.), Queen Anne's lace (*Daucus carota*), and blackberry (*Rubus* sp.).

Wetland plant communities consist primarily of emergent vegetation. Dominant vegetation includes soft rush (*Juncus* sp.), cattail (*Typha latifolia*), and duckweed (*Lemna* sp.). Young willow (*Salix* sp.) also was observed around the edges of the pond.

Wildlife species observed utilizing areas of SWMU 23 were primarily birds. Barn swallows (*Hirundo rustica*), purple martins (*Progne subis*), red-winged blackbird (*Agelaius phoeniceus*), killdeer (*Charadrius vociferus*) and mourning dove (*Zenaida macroura*), were observed in the area. Amphibians, such as the gray treefrog (*Hyla versicolor*) and leopard frog (*Rana sphenoccephala*), were heard calling. One mammal, an eastern cottontail rabbit (*Sylvilagus floridanus*), was observed near the SWMU. No reptiles were observed. Other animals are expected to utilize this community either for foraging or shelter. Common animals expected to occur include those adapted to disturbed and early successional areas. Species of mice, rats, snakes, lizards, frogs, toads, and small mammals may be observed in the vicinity of the SWMU. Overall, wildlife diversity in the vicinity of the SWMU is expected to be moderate as a result of the surrounding undeveloped land.

A low diversity of aquatic species is expected. Frogs appear to be the dominant faunal type. No minnows or other fish were observed or noted during the field investigation. The water was discolored and a sheen was visible. The water also had an odor.

#### 5.7.1.1.2.2 SWMU 24

SWMU 24 is near the northeast corner of the property, immediately south of the polishing pond. SWMU 24 is a blast furnace emission control sludge waste pile and contains black granular material generated during the production of pig iron from 1958 to 1979. Field observations indicate that much of the sludge material associated with the SWMU has been removed. Sludge material is currently being removed from the area.

The majority of the SWMU is barren land. A large amount of sludge appears to have been removed from the northernmost area. Vegetation is in a very early stage of succession. The northern area of the SWMU exhibits mainly pioneer species such as

goldenrod, ragweed, blackberry, and various grasses. The diversity at the present time is relatively low. SWMU 24 is approximately 10 acres in size.

Wildlife diversity in the area is consistent with plant diversity. Very few species were noted during the field investigation. The species observed were red-winged blackbird, killdeer, and bank swallows, and were noted along the northernmost portion of the SWMU, adjacent to the polishing pond. No aquatic habitats are present at SWMU 24.

#### 5.7.1.1.2.3 SWMU 38

SWMU 38 is in the north-central part of the Sloss Facility, west of the quarry and south of SWMUs 23 and 24. It consists of a landfill used by Sloss for construction-type debris. Debris identified at the landfill included concrete rubble, conveyor belts, wood, construction material, empty 55-gallon drums, flue dust, and coal. This SWMU has more diversity of vegetation and wildlife than SWMUs 23 and 24. SWMU 38 is bounded to the west by a stormwater runoff sewer (SWMU 25) and to the east by an above-ground BTF sewer line. SWMU 38, used for disposal of construction debris and soil from excavation activities, is approximately 10 acres in size.

The vegetation present in and around SWMU 38 is classified as disturbed. Areas along the slopes of the SWMU exhibit a canopy and understory of vegetation while areas on the top only have pioneer species. The rim of the SWMU is relatively flat and void of vegetation. Hackberry (*Celtis laevigata*), box elder (*Acer negundo*), red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvanica*), water oak (*Quercus nigra*), red cedar (*Juniperus virginiana*), black walnut (*Juglans nigra*), birch (*Betula* sp.), mullein (*Verbascum* sp.), and princess-tree (*Paulownia tomentosa*) were noted along these slopes. Vines included grape (*Vitis* sp.), Virginia creeper (*Parthenocissus quinquefolia*), Japanese honeysuckle (*Lonicera japonica*), trumpet creeper (*Campsis radicans*), and poison ivy (*Toxicodendron radicans*). Herbaceous vegetation noted on the slopes of the

SWMU consisted of goldenrod, ragweed, milkweed, mimosa (*Albizia julibrissin*), clover (*Trifolium* sp.), aster, Queen Anne's lace, pokeweed, thistle (*Carduus* sp.), and spleenwort (*Asplenium* sp.). In addition to mimosa, birch, boxelder, and Japanese honeysuckle, cocklebur (*Xanthium* sp.), morning glory (*Ipomoea* sp.), vetch (*Vicia* sp.), and blackberry (*Rubus* sp.) were noted along the top portions of SWMU 38.

A small area temporarily inundated by water was noted outside the northern perimeter of SWMU 38. It consists primarily of bottomland hardwoods (maples, oaks, etc.) and is approximately 1 acre in size. This inundated area resulted from an influx of water from the stormwater runoff sewer (SWMU 25). A blockage was noted in the sewer which caused the diversion of water into this area. The water was retained in this area by a small rock outcrop outside of the northeast perimeter.

Bird species observed in the landfill area were northern bobwhite (*Colinus virginianus*), mockingbird (*Mimus polyglottos*), red-winged blackbird, mourning dove, killdeer, and bank swallows. One eastern cottontail rabbit was noted along the northern perimeter. Otherwise, no reptiles or amphibians were seen; however, habitat is available for these and other species that require open, disturbed areas. A low diversity of wildlife is expected to utilize this community due to its location and proximity to surrounding forested communities.

A minnow trap was set just below the rock outcrop in the area inundated by the stormwater runoff sewer. One banded pigmy sunfish (*Elassoma zonatum*) was captured. No other aquatic fauna was observed in this area.

#### 5.7.1.1.2.4 SWMU 39

SWMU 39 is also a blast furnace waste pile. SWMU 39 contains black granular material, similar to SWMU 24, that was generated during the production of pig iron from



1958 to 1979. The waste pile at SWMU 39 is a northeast-southwest trending ridge that is adjacent to SWMU 38. SWMU 39 is approximately 10 acres in size.

Vegetation associated with SWMU 39 is very similar to that of SWMU 38 except that pines, including loblolly pine (*Pinus taeda*) and Virginia pine (*Pinus virginiana*), occupy the northern perimeter rather than hardwoods.

One wetland community is along the eastern boundary of SWMU 39. This community is associated with the drainage canal that flows into Five Mile Creek. Cattails, soft rush, willow, and water oak were the dominant vegetation. The wetland community opens into a small pond-like area immediately north of the SWMU.

Wildlife observed in the vicinity of SWMU 39 consists mostly of birds: mockingbird, gray catbird (*Dumetella carolinensis*), red-winged blackbird, northern cardinal (*Cardinalis cardinalis*), great crested flycatcher (*Myiarchus crinitus*), mourning dove, and bank swallows. Like SWMU 38, SWMU 39 is expected to have a low diversity of wildlife primarily due to its location.

Aquatic fauna were observed in the adjacent drainage canal and small pond area. Eastern mosquito fish (*Gambusia affinis*), crayfish (*Procambarus* sp.), dragonfly nymphs, and several frogs (*Rana* sp.) were observed in these areas. The diversity of aquatic fauna is also expected to be low due to its location and surrounding land uses.

#### 5.7.1.1.3 Biotic Stresses

Indications of potential biotic stress were looked for during the field investigation. Biotic stress may be induced by chemical and/or non-chemical anthropogenic activities. Chemically-induced stress may be identified by a number of characteristics including reduced biotic diversity, changes in community composition, and mortality of organisms. Stained soil, surface-water odors, or other signs of potential impacts may also indicate

chemically-induced stress. Non-chemical anthropogenic effects such as urban development and agricultural practices may also result in reduced biotic diversity and/or abundance, changes in community composition, and organisms mortality.

Vegetation at the site was found to be in good condition. No difference in vegetation health was observed between plants on-site and off-site. The vegetation present at the SWMUs appeared healthy.

#### 5.7.1.1.4 Special Status Species

The Alabama Natural Heritage Program and the Alabama Division of Game and Fish were requested to provide the most recent information concerning the occurrence of threatened and/or endangered plant and animal species, any habitats of special concern, and/or environmentally sensitive areas at or in the vicinity of the site. The requests and responses are presented in Appendix E. Responses from these agencies indicated that a Federally endangered fish species, the Watercress Darter (*Etheostoma nuchale*), inhabits Roebuck Springs, which is approximately 3 to 5 miles east of the site. Due to the fact that the Watercress Darter is found only in watercress-choked waters of limestone origin with substrate of angular gravel in riffle areas and silt and mud in areas of watercress, and these types of surface-water bodies do not exist on or near the site, there is no reason to believe that COECs present any potential impact to this animal species. Additionally, COECs identified at the site would not be expected to migrate to Roebuck Springs.

#### 5.7.1.2 Selection of Constituents of Ecological Concern

The selection of potential COECs for the ERA involves a screening process that is used to limit the constituents that require evaluation in the assessment to those constituents of greatest ecological concern. Because the toxicity of some constituents to wildlife differs from that of human receptors, the COECs for the ERA may differ from

those evaluated in the human health risk assessment. Data used in the determination of potential COECs are presented in Tables 5-1 through 5-6.

COECs were selected by comparing maximum constituent concentrations detected in soil and sludge samples to background constituent concentrations and Oak Ridge National Laboratory (ORNL) preliminary soil remediation goals (PRGs) for ecological endpoints (ORNL, 1996). Background data for soil were presented in Table 5-9. ORNL Ecological PRGs for soil were selected by comparing toxicological benchmarks for plants, microorganisms, earthworms, and wildlife, and selecting the lowest value as the PRG. Constituent concentrations detected in soil and sludge samples at each SWMU that exceeded two times the site-specific background concentration or the ORNL PRG were retained as COECs. The selection of COECs is presented in Tables 5-35 through 38.

#### **5.7.1.3 Assessment and Measurement Endpoints**

This ERA focuses on representative receptors that may be affected directly or indirectly by selected COECs and the likelihood and extent of those effects. Flora and fauna observed at the site were discussed in Section 5.7.1.1. Terrestrial receptors were selected for quantitative exposure assessment to surficial soil and sludge. Potential risks to aquatic receptors were not assessed in this risk assessment since the major bodies of water associated with the site (various drainage ditches and Five Mile Creek) will be sampled and assessed at a later date as part of subsequent field activities and reports.

The endpoint for this assessment was effects on herbivorous populations through soil and sludge exposure sufficient to impair reproduction. COEC concentrations in soil, sludge, and food sources were compared to toxicological benchmark values as a measure of this endpoint. Toxicological benchmark values are presented in Table 5-39.

It is not feasible to evaluate COEC effects on all species using habitats at the site; therefore, target receptor species are selected and evaluated as surrogate species for terrestrial organisms with the greatest potential for exposure. The eastern cottontail rabbit (*Sylvilagus floridanus*) was selected as an indicator species to evaluate the assessment endpoints because it is societal, has a range small enough to be associated with the site, serves as prey for a variety of species, would be expected to be exposed to media at the site, and was observed on-site during the ecological field survey.

### **5.7.2 Exposure Assessment**

The exposure assessment evaluates the relationship between ecological receptors and media at the site. Potential exposure pathways, exposure point concentrations, specific target receptor species, and exposure doses are discussed in this section.

#### **5.7.2.1 Exposure Pathways**

The primary means by which ecological receptors may be exposed to constituents at the site is through incidental ingestion of, and dermal contact with, surficial soil and/or sludge. Potential exposure pathways for terrestrial wildlife include ingestion of food (either plant or animal), incidental ingestion of soil while foraging, grooming or burrowing, inhalation of particulates or vapors potentially released at the site, and ingestion of surface water. The total exposure by terrestrial wildlife is represented by the sum of the exposures from each individual source. COECs at the site (primarily SVOCs and inorganics/metals) are not expected to volatilize, and as previously indicated, surface water is not evaluated in this assessment with the exception of mercury. COECs identified at the site would not be expected to bioaccumulate in organisms. Therefore, the exposure pathways evaluated for the cottontail rabbit included direct exposure to COECs via soil and sludge ingestion and indirect exposure to COECs via ingestion of vegetation at the site.

### 5.7.2.2 Exposure Point Concentrations

Wildlife species are mobile and likely use various portions of the site. They are unlikely to be exposed to maximum detected constituent concentrations. Therefore, estimates of exposure to COECs by wildlife species were calculated using the upper 95 percent confidence limit (UCL) on the arithmetic average constituent concentrations detected in soil and surface-water media at the site.

### 5.7.2.3 Exposure Dose Calculation

Potential exposure pathways for the cottontail rabbit at the site include ingestion of food (plants), incidental ingestion of surficial soil, ingestion of drinking water, and inhalation of contaminated air or particles. Respiration data were unavailable for the rabbit and as previously mentioned, COECs at the SWMUs are not expected to volatilize; therefore, the inhalation pathway was not evaluated. Surface-water data are unavailable to evaluate the drinking-water pathway. The daily intake of COECs for the rabbit through ingestion of food (plants) and soil was estimated by the following equation:

$$I = \frac{[(C_{veg})(I_v) + (C_s)(I_s)](H)}{BW} \quad (\text{USEPA, 1997c})$$

where:

I	=	total estimated constituent intake (mg/kg/day);
C <sub>veg</sub>	=	constituent concentration in vegetation (mg/kg);
C <sub>s</sub>	=	constituent concentration in soil or sludge (mg/kg);
I <sub>v</sub>	=	ingestion rate of vegetation (kilograms per day [kg/day]);
I <sub>s</sub>	=	ingestion rate of soil or sludge (kg/day);
H	=	home range/area of concern (unitless); and
BW	=	body weight (kg).

Information required to estimate constituent exposure for the target species was obtained from the available literature. The food consumption rate for the rabbit is reported to be 0.237 kg/day (Dalke and Sime, 1941), and the incidental soil ingestion rate is assumed to be 6.3 percent of the diet or approximately 0.15 kg/day (Sample and Suter, 1994). The average cottontail body weight is 1.2 kg (Sample and Suter, 1994), and the home range ranges from 7.65 acres to 19.26 acres (Sample and Suter, 1994). The area of the SWMUs ranges from approximately 2 acres (SWMU 23) to 10 acres (SWMUs 38 and 39). An area use factor of 1, which equals the home range divided by the area of each SWMU, was used as a conservative measure.

Data on the constituent concentrations in vegetation (Cveg) were not available. Therefore, these values were estimated using soil to plant uptake factors obtained from the literature. Soil-to-plant uptake factors (PU) for organic constituents were derived using methods presented by Travis and Arms (1988) in which uptake factors for organic constituents in vegetation is inversely proportional to the square root of the octanol-water partitioning coefficient ( $K_{ow}$ ). PUs for inorganic constituents were obtained from Baes et al. (1984). The PUs are presented in Table 5-40. PUs estimate constituent concentrations on a dry-weight basis. Therefore, a dry-to-wet conversion must be used. Based on the assumption that fresh foliage is 85 percent water (USEPA, 1993), the COEC in fresh vegetation is estimated by the following equation:

$$\text{Foliage}_{\text{fresh}} = \text{Foliage}_{\text{dry}} \times (1-W)$$

where:

$\text{Foliage}_{\text{fresh}}$	=	constituent concentration in fresh foliage;
$\text{Foliage}_{\text{dry}}$	=	constituent concentration in dry foliage; and
W	=	proportion of water in foliage (0.85).

Therefore, Cveg is calculated by multiplying the COEC concentration in soil by the PU and by 1-W.

### 5.7.3 Effects Assessment

Information on the measurement endpoints and potential toxicity of COECs to ecological receptors is presented and discussed in this section. Measurement endpoints are used to link conditions at the base with the assessment endpoints (Section 5.7.1.3, Assessment and Measurement Endpoints). The measurement endpoint included:

- A hazard quotient in excess of 1 for COECs for the selected terrestrial herbivore indicator species (cottontail rabbit), white-footed mouse, and white-tailed deer;

Toxicity information derived from the literature was used to develop benchmark values for the selected indicator species. By comparing constituent concentrations measured at the site to these benchmarks, the likelihood that constituents pose a risk to ecological receptors was determined. Calculated exposure doses and constituent concentrations were compared to benchmarks to derive HQs used in the assessment. To determine potential hazards to the indicator species, benchmarks related to reproductive endpoints were used whenever possible. Reproductive endpoints generally are considered protective at the population level, against sublethal adverse effects associated with chronic exposure to a particular constituent. However, based on a comprehensive review of the scientific literature, measurement endpoints related to reproductive effects were not available for some COECs.

Toxicity benchmarks for evaluation of effects to the indicator species were selected from the following sources, listed in order of preference:

- (1) chronic NOAELs presented in Sample et al. (1996);
- (2) chronic NOAELs presented in the primary literature (various authors); and
- (3) toxicological information presented in the primary literature (various authors).

The chronic NOAELs presented are based on experimental studies on laboratory animals. When necessary, uncertainty factors of 10 were used when extrapolating from acute or subchronic studies to chronic effects and when extrapolating from LOAELs to NOAELs (Sample et al., 1996).

The chronic NOAELs for the test species were adjusted further using a scaling factor to account for differences in body weights between the test species and the indicator species. Larger animals have lower metabolic rates and therefore have lower rates of detoxification than smaller animals (Sample et al., 1996). The following equation from Sample et al. (1996) was used to account for body weight differences for each COEC:

$$\text{chronic NOAEL}_t = \text{chronic NOAEL}_i \times (BW_i/BW_t)^{1/4}$$

where:

chronic NOAEL <sub>i</sub>	=	chronic NOAEL for indicator species;
chronic NOAEL <sub>t</sub>	=	chronic NOAEL for test species;
BW <sub>i</sub>	=	body weight of indicator species; and
BW <sub>t</sub>	=	body weight of test species.

The body weights of the test species and the indicator species were taken from the available literature. Toxicological benchmarks for the rabbit are presented in Table 5-39.

#### **5.7.4 Risk Characterization**

Risk characterization integrates the results of the exposure assessment and effects assessment to estimate risk to potential ecological receptors. Information from the biological field survey was used in conjunction with site-specific soil and sludge data to qualitatively and quantitatively evaluate the potential risks and to provide a weight-of-evidence approach to best estimate risks at the site. The principal lines of evidence



concerning effects used in this assessment were biological data collected during the field survey, which address the actual condition of the receiving environment, and calculation of the effects of exposure on endpoint species using the quotient method.

Potential risks to ecological receptors were assessed by comparing media-specific COEC concentrations or estimated daily doses with toxicological benchmarks. This comparison, called the HQ method, compares estimated expected environmental concentrations (EEC) for a specific constituent or daily doses to benchmark values to determine whether the EEC or receptor dose is less than or equal to an acceptable or "safe" dose. The HQ is defined as the ratio of the EEC or the estimated daily dose of a constituent through a particular exposure route to the benchmark for the same constituent through that ingestion route. This process is similar to the calculation of the HQ for human health. The comparison was made for each COEC and is expressed as:

$$HQ = \text{Dose (mg/kg-day)} / \text{benchmark (mg/kg-day)}$$

where:

HQ	=	hazard quotient;
Dose	=	estimated constituent dose for a given receptor; and
benchmark	=	toxicological benchmark value.

Using this method, the degree to which a particular constituent concentration exceeds a toxicological benchmark can be evaluated. Therefore, an HQ greater than 1 indicates that a given exposure dose exceeds the toxicological benchmark for a particular species. The greater the HQ, the greater the exceedence. An HQ less than 1 indicates that, for a particular constituent-species interaction, ecological risks are unlikely to occur.

Exposures to the same constituent that may occur through multiple exposure pathways was considered using the quotient method for soils. An HQ for a specific chemical (HQ<sub>chem</sub>) represents the sum of the individual HQs for a constituent through more than one pathway. For example, the cumulative HQ for an individual constituent

was determined for the white-footed mouse by summing the HQs for plant ingestion and soil ingestion, or:

$$HQ_{\text{chem}} = HQ_{\text{plant}} + HQ_{\text{soil}}$$

where:

$HQ_{\text{chem}}$	=	hazard quotient for an individual constituent;
$HQ_{\text{plant}}$	=	hazard quotient for the constituent through plant ingestion; and
$HQ_{\text{soil}}$	=	hazard quotient for the constituent through soil ingestion or sludge.

The quotient method can also be used to estimate impacts to receptors potentially occurring from exposure to multiple constituents through all exposure pathways at the site. A cumulative HI ( $HI_{\text{cum}}$ ), representing the sum of individual  $HQ_{\text{chem}}$  or individual HQs for each COEC, was calculated for the indicator species at the site. This calculation is based on the assumption that the potential toxicity of multiple constituents is additive. A discussion of potential risks posed to terrestrial wildlife by constituent concentrations detected at the site is provided in the following paragraphs.

Potential risks to herbivorous terrestrial wildlife through exposure to soil and sludge were assessed by comparing estimated daily doses of COECs (based on the lesser of the 95 percent UCL and the maximum detected concentration) with toxicological benchmark values using the white-footed mouse and the white-tailed deer as endpoint species. The rabbit was assumed to be exposed to COECs through the ingestion of COECs in vegetation and the incidental ingestion of COECs in soil and sludge. HQs for the rabbit based on exposure to soil, vegetation, and sludge for each SWMU with useable habitat (e.g., SWMU 23 and SWMUs 38 and 39) are presented in Tables 5- 41 through 5-44 and are summarized below.

The HI for herbivorous terrestrial wildlife exposure to soil and vegetation at SWMU 23 was 6 (Table 5-41). With the exception of arsenic, no COEC concentration detected in soil produced an HQ greater than 1. The HI for herbivore exposure to sludge and vegetation at SWMU 23 was 950 (Table 5-42). Constituents producing HQs greater than 1 included benzo(a)pyrene, arsenic, barium, mercury, and selenium.

The HI for herbivorous terrestrial wildlife exposure to soil and vegetation at SWMUs 38 and 39 was 3 (Table 5-43). Antimony and barium were the only constituents that produced HQs greater than 1. The HI for herbivore exposure to sludge and vegetation at SWMUs 38 and 39 was 27 (Table 5-44). Constituents producing HQs greater than 1 included antimony, barium, cadmium, lead, and zinc.

Given the likelihood that the rabbit consumes food not found at the SWMUs and, therefore, ingests less soil and vegetation from the SWMUs than estimated, the true dose is likely to be much lower than that calculated. Additionally, the conservative nature of the literature-derived toxicity values used to evaluate ecological risks likely overestimates potential risks to receptors. For example, when the background arsenic concentration (11 mg/kg) is used in the exposure equation, an HQ (of 3) in excess of the benchmark value of 1 still results.

Based on the conservative assumptions and toxicity data used in this assessment, the minimal exceedence of the benchmark HI of 1 for exposure to soil, and the diverse and healthy assemblage of vegetation and wildlife observed during the field survey, unacceptable risks would not be expected for wildlife exposure to soil at SWMU 23 and SWMUs 38 and 39. Although the conservative nature of the assessment likely overestimates risks associated with wildlife exposure to sludge at SWMU 23 and 39, the exceedences of the benchmark HI of 1 indicate that there is the potential for unacceptable risks associated with wildlife exposure at these SWMUs.

### **5.7.5 Ecological Risk Assessment Uncertainties**

Major sources of uncertainty in the ecological assessment are the selection of the indicator species, the use of the site by this species, and the dose estimation. Differences in the feeding habits, habitat, behavior, and activity patterns of animals can result in varying exposure to COECs. The rabbit was assumed to be an appropriate indicator species, but may not represent the most sensitive species. The selection of this species was based on the biological survey conducted at the site. Estimation of the COEC dose involves several uncertainties including the COEC concentration estimated to be taken up from media, the assumed diet of rabbits potentially using the site and their daily food and soil ingestion rates, and utilization of the site. The exposure assumptions used are conservative and would overestimate the actual risk to this species.

## **5.8 CONCLUSIONS**

The human health risk assessment evaluated potential human health effects based on exposure to constituents in soil and sludge at SWMU 23, SWMU 24, and SWMUs 38 and 39. The potential exposure scenarios evaluated were contact to surficial soil and sludge by a Sloss site worker and contact to subsurface soil by a hypothetical future construction worker. Site worker exposure was calculated for exposure to sludge for SWMUs 23, 24, and 39, and was calculated for exposure to surficial soil for SWMU 24. Construction worker exposure was calculated for exposure to subsurface soil in SWMU 23 and SWMUs 38 and 39. Surficial soil and sludge data were used to evaluate current exposure conditions for site workers, and subsurface soil data were used to evaluate future conditions for construction workers. The results of the deterministic (point-estimate) risk estimates are summarized below.

- The ELCR and HI for site worker exposure to sludge in SWMU 23 were  $1 \times 10^{-5}$  and 0.01, respectively. The major contributor to the ELCR is benzo(a)pyrene. The ELCR and HI for construction worker exposure to

subsurface soil in SWMU 23 were  $8 \times 10^{-7}$  and 0.1, respectively. The ELCR for site worker exposure is within the target range of  $1 \times 10^{-6}$  to  $1 \times 10^{-4}$ , and the ELCR for construction worker exposure is below the target range. The HIs for both site worker and construction worker exposure are below the target of 1.

- The ELCR and HI for site worker exposure to surficial soil in SWMU 24 were  $4 \times 10^{-5}$  and 0.2, respectively. The major contributor to the ELCR is benzo(a)pyrene. The ELCR and HI for site worker exposure to sludge in SWMU 24 were  $2 \times 10^{-6}$  and 0.6, respectively. The major contributor to the ELCR is beryllium. The ELCRs are within the target range of  $1 \times 10^{-6}$  to  $1 \times 10^{-4}$ , and the HIs are below the target of 1.
- The ELCR and HI for site worker exposure to sludge in SWMU 39 were  $2 \times 10^{-6}$  and 0.5, respectively. The only contributor to the ELCR is beryllium. The ELCR and HI for construction worker exposure to subsurface soil in SWMUs 38 and 39 were  $8 \times 10^{-8}$  and 0.0003, respectively. The ELCR for site worker exposure is within the target range of  $1 \times 10^{-6}$  to  $1 \times 10^{-4}$ , and the ELCR for a construction worker is below the target range. The HIs for both site worker and construction worker exposures are below the target of 1.

RGOs were calculated for the exposure scenarios where the ELCR exceeded  $1 \times 10^{-6}$ . RGOs for non-carcinogenic risks were unnecessary because all of the HQs and HIs were below 1. Following USEPA (1996a) guidelines, RGOs were presented at ELCR target risk levels corresponding to  $10^{-4}$ ,  $10^{-5}$ , and  $10^{-6}$ .

None of the constituent EPC concentrations exceeded the RGO at a  $1 \times 10^{-4}$  risk level. Only the benzo(a)pyrene EPC concentrations exceeded a  $1 \times 10^{-5}$  risk level. The benzo(a)pyrene EPC in SWMU 24 surficial soil is 7.3 mg/kg, while the RGO is 2.4

mg/kg. A RGO for lead of 1,400 mg/kg was calculated. The lead EPC is above the calculated RGO for sludge in SWMU 24.

Monte Carlo Analysis (probabilistic risk estimate) was conducted for the exposure scenarios where the total excess lifetime cancer risks from the deterministic (i.e., point estimate) calculations exceeded the lower end ( $1 \times 10^{-6}$ ) of the range of acceptable risk values ( $10^{-6}$  to  $10^{-4}$ ). Only the cancer risks were included in the Monte Carlo Analysis since the deterministic non-cancer risks were all acceptable (i.e., HI less than 1).

The results of the Monte Carlo Analysis indicated that the 95<sup>th</sup> percentile values all lie below or slightly exceed the lower end of the range of acceptable cancer risk ( $10^{-6}$  to  $10^{-4}$ ); the median and mean values all lie below this level. Only site worker exposure to sludge in SWMU 24 ( $1 \times 10^{-6}$ ) and surficial soil in SWMU 24 ( $2 \times 10^{-6}$ ) equaled or exceeded the lower end of the acceptable range using the 95<sup>th</sup> percentile values. Typically, the median value is used to represent average exposure conditions while the 95<sup>th</sup> percentile is used to represent RME conditions.

The ecological risk assessment evaluated potential ecosystem effects based on potential ecological receptor exposure to constituents in soil and sludge at SWMU 23 and SWMUs 38 and 39. SWMU 24 was found to contain limited habitat to support ecological receptors and, therefore, was not evaluated as part of the ecological assessment. The cottontail rabbit, a herbivorous terrestrial species, was used as an indicator species to evaluate potential ecosystem effects. Exposure pathways evaluated for the indicator species included direct exposure to constituents via soil and sludge ingestion and indirect exposure to constituents via ingestion of vegetation at the SWMUs. The results of the ecological risk assessment are summarized below:

- An Ecological Inventory was conducted to collect data on:
  - biotic communities present on the site and surrounding areas;

- the presence of species of special concern;
  - evidence of biological and/or chemical stress; and
  - evidence of the potential for algal blooms.
- Based on the ecological assessment, constituent concentrations detected in the soil at the SWMUs are unlikely to present a risk to ecological receptors. There is the potential for unacceptable risks for herbivorous terrestrial species exposed to sludge at the SWMUs.

## **6.0 RECOMMENDATIONS**

The following recommendations for additional investigations are based upon the data presented in Section 4.0 and the risk assessment presented in Section 5.0 of this report. Recommendations were developed and are discussed on a SWMU basis.

### **6.1 BIOLOGICAL SLUDGE DISPOSAL AREA (SWMU 23)**

Due to the low levels of detected constituents and the findings of the risk assessment, no further action is recommended for SWMU 23.

### **6.2 BLAST FURNACE EMISSIONS CONTROL SLUDGE WASTE PILE (SWMU 24)**

Due to the low levels of detection constituents, the findings of the risk assessment, and the on-going mining/removal activities, no further action is recommended for SWMU 24.

### **6.3 LANDFILL AND BLAST FURNACE EMISSION CONTROL SLUDGE WASTE PILE LANDFILL (SWMUS 38 AND 39)**

Due to the low levels of detected constituents, the findings of the risk assessment, and the proposed mining/removal activities for SWMU 39, no further action is recommended for either SWMU 38 or 39.



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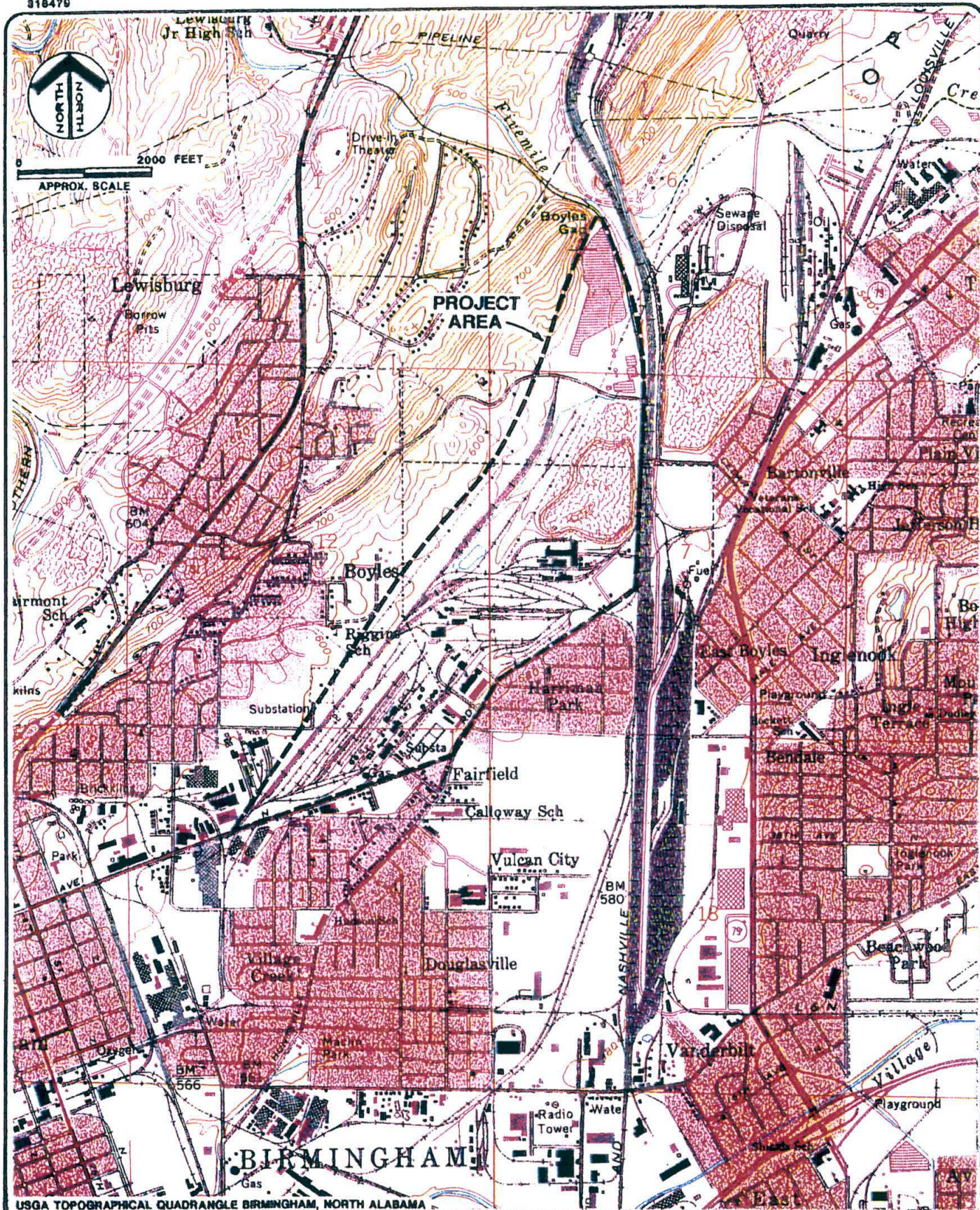
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## PROJECT LOCATION MAP

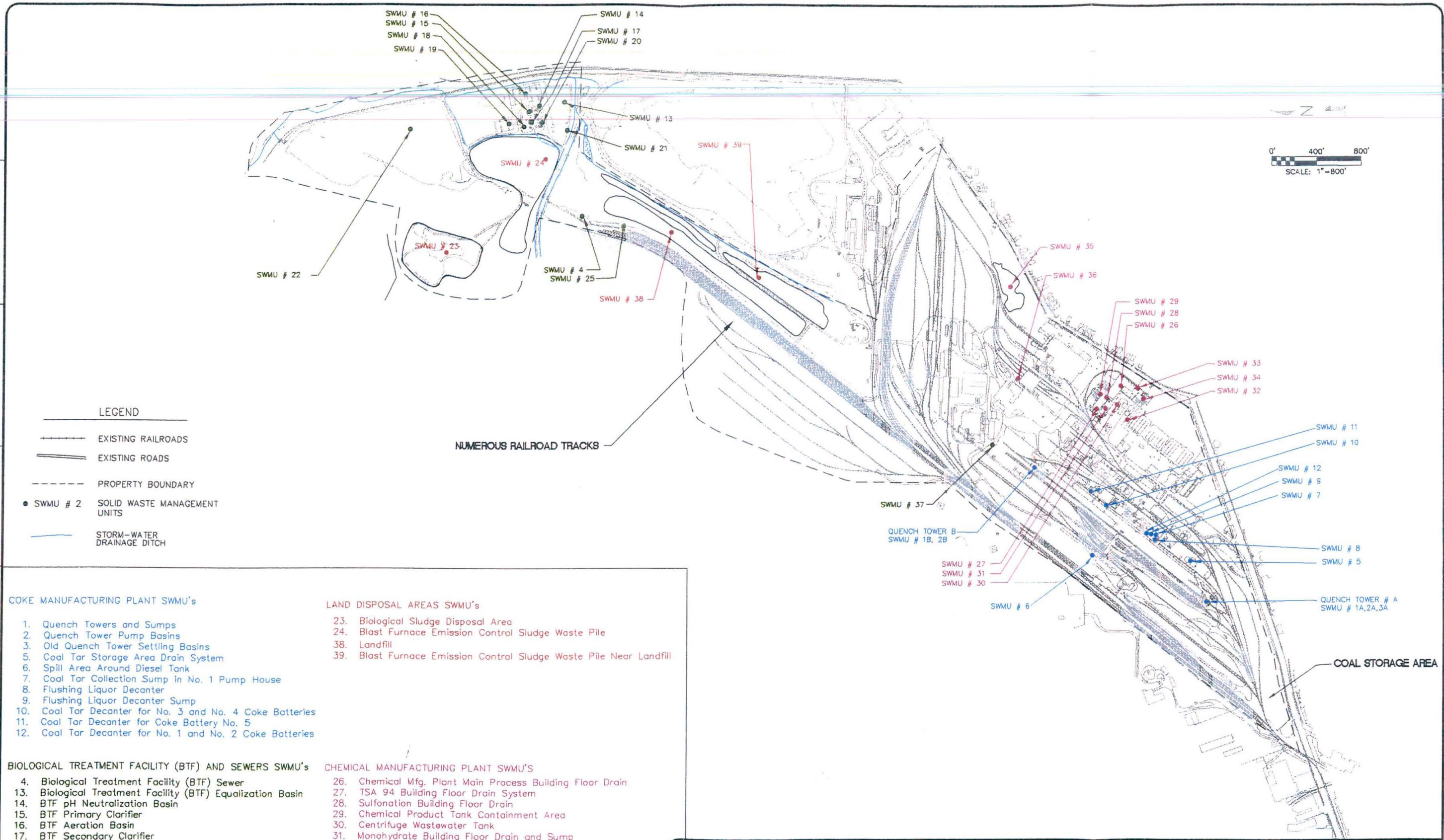
SLOSS INDUSTRIES, CORPORATION  
BIRMINGHAM, ALABAMA

FIGURE

1-1

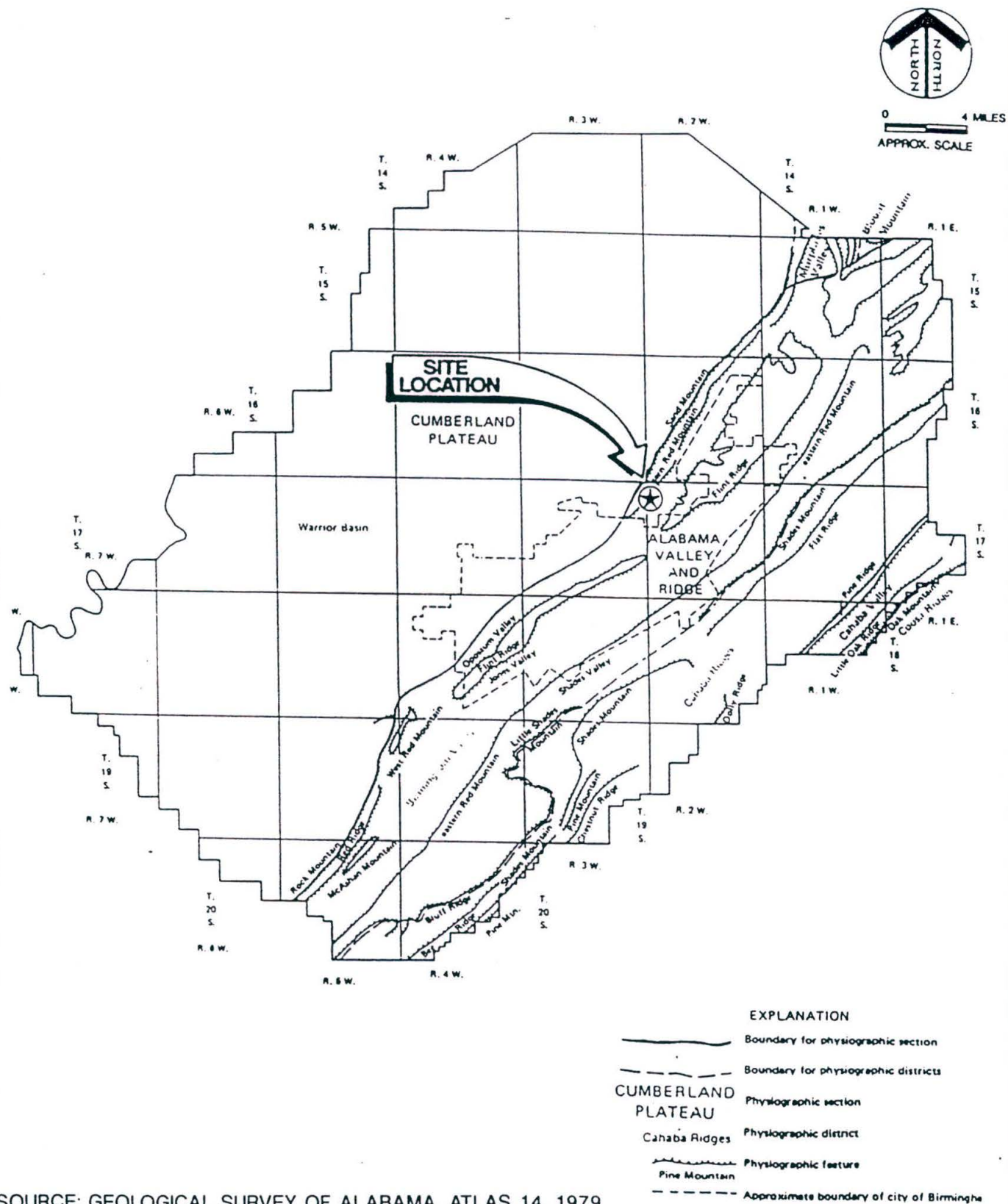


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**FACILITY PLAN**  
LAND DISPOSAL AREAS RFI  
SLOSS INDUSTRIES CORPORATION  
BIRMINGHAM, ALABAMA





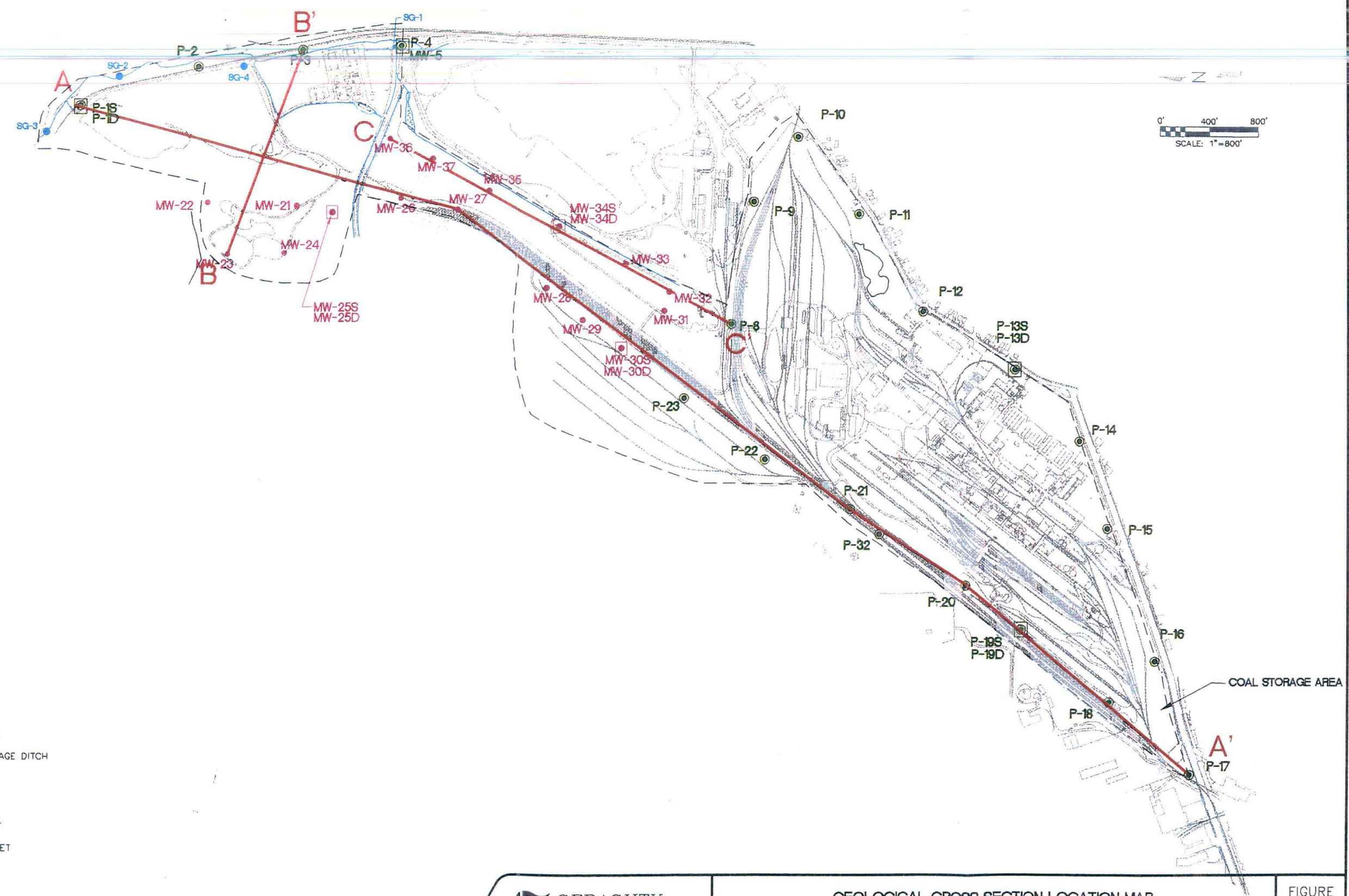


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**LEGEND**

- EXISTING RAILROADS
- EXISTING ROADS
- PROPERTY BOUNDARY
- STORM-WATER DRAINAGE DITCH
- P-31 SINGLE PIEZOMETERS
- P-1 PIEZOMETER COUPLET
- MW-21 SINGLE MONITOR WELL
- MW-25 MONITOR WELL COUPLET
- SG-3 STAFF GAUGE

**A—A'** GEOLOGICAL CROSS SECTION LOCATION



GEOLOGICAL CROSS SECTION LOCATION MAP

LAND DISPOSAL AREAS RFI  
SLOSS INDUSTRIES CORPORATION  
BIRMINGHAM, ALABAMA



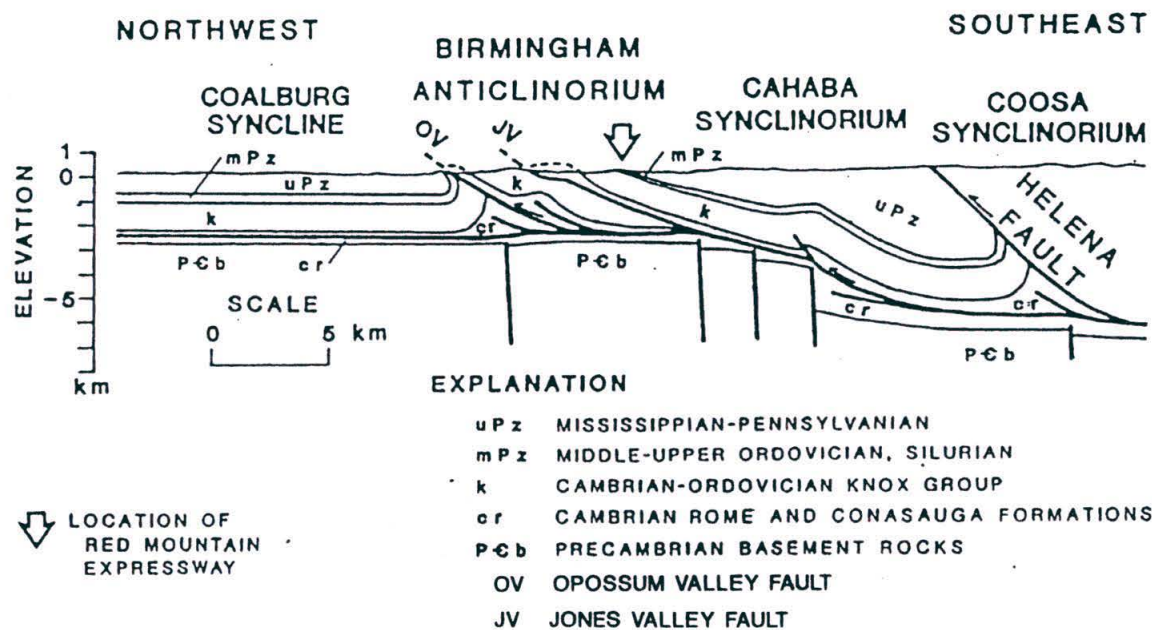
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FORMATION	LITHOLOGY	THICKNESS
POTTSVILLE FORMATION (Pp)	ALTERNATING BEDS OF SANDSTONE AND SHALE WITH NUMEROUS COAL SEAMS AND ASSOCIATED BEDS OF UNDERCLAY ORTHOQUARTZITE AND QUARTZ PEBBLE CONGLOMERATE OCCUR AT BASE	100 TO 2800 FEET
PARKWOOD FORMATION (PMpw)	LIGHT TO MEDIUM GRAY, VERY FINE TO FINE GRAINED, ARGILLACEOUS, MICACEOUS SANDSTONE INTERBEDDED WITH MEDIUM TO DARK GRAY, FISSLE, MICACEOUS SHALE AND SILTSTONE.	0 TO 900 FEET
FLOYD SHALE (Mf)	DARK GRAY CLAY SHALE WITH LOCALLY OCCURRING THIN SILTSTONE BEDS.	0 TO 600 FEET
BANGOR LIMESTONE (Mb)	MEDIUM BEDDED, MEDIUM TO MEDIUM LIGHT GRAY, BIOCLASTIC OR OOLITIC LIMESTONE WITH LOCALLY OCCURRING ARGILLACEOUS AND SUBLITHOGRAPHIC LIMESTONE AND SHALE	0 TO 500 FEET
HARTSELLE SANDSTONE (Mh)	MEDIUM TO VERY THICK BEDDED, CLEAN, WELL SORTED, LIGHT COLORED, VERY FINE TO MEDIUM GRAINED, CROSS-BEDDED, QUARTZ SANDSTONE.	0 TO 120 FEET
PRIDE MOUNTAIN FORMATION (Mpm)	DARK GRAY, FISSLE, CLAY SHALE WITH THIN SANDSTONE AND SILTSTONE BEDS. BASAL OOLITIC LIMESTONE BED. CLAY SHALE INDISTINGUISHIBLE FROM THE FLOYD SHALE.	120 TO 400 FEET
TUSCUMBIA LIMESTONE (Mt)	THICK BEDDED, MEDIUM DARK TO MEDIUM GRAY CRYSTALLINE, OOLITIC SUBLITHOGRAPHIC AND BIOCLASTIC LIMESTONE WITH MINOR AMOUNTS OF CHERT.	70 TO 110 FEET
FORT PAYNE CHERT (Mfp)	GRAYISH ORANGE TO LIGHT GRAY, BEDDED, FOSSILIFEROUS CHERT. GENERALLY HIGHLY WEATHERED IN OUTCROP. GREENISH-GRAY TO GRAYISH RED THINLY LAMINATED SHALE COMMONLY OCCURS AT BASE (MAURY FORMATION).	90 TO 200 FEET
CHATTANOOGA SHALE (Dc)	BROWNISH-BLACK, FISSLE, SILTY SHALE.	0 TO 10 FEET
FROG MOUNTAIN SANDSTONE (Dfm)	MEDIUM TO THICK BEDDED, DUSKY RED AND LIGHT TO DARK GRAY, COARSE GRAINED, HEMATITIC SANDSTONE AND LIGHT TO DARK GRAY HEMATITIC SANDSTONE AND PEBBLE CONGLOMERATE.	0 TO 36 FEET
DEVONIAN UNDIFFERENTIATED (Du)	LIGHT OLIVE GRAY TO WHITE TO YELLOWISH GRAY, FINELY CRYSTALLINE SILICEOUS, CHERTY, GLAUCONITIC, DOLOMITIC LIMESTONE	0 TO 120 FEET
RED MOUNTAIN FORMATION (Srm)	DARK-REDISH-BROWN TO OLIVE GRAY SILTSTONE, SANDSTONE, OCCASIONAL THIN BED OF LIMESTONE, AND SHALE WITH HEMATITE BEDS 5-30 FEET THICK.	200 TO 500 FEET
CHICKAMAUGA LIMESTONE (Oc)	THIN TO MEDIUM BEDDED SUBLITHOGRAPHIC LIMESTONE WITH SOME ARGILLACEOUS AND CRYSTALLINE LIMESTONE, SHALE, AND BENTONITE INTERBEDS. BASAL CHERT CONGLOMERATE PRESENT(ATTALLA CHERT).	200 TO 500 FEET
KNOX GROUP UNDIFFERENTIATED (Ock)	THICK BEDDED, MEDIUM TO LIGHT GRAY CHERTY DOLOMITE WITH LESSER AMOUNT OF LIMESTONE AND DOLOMITIC LIMESTONE	1500 TO 3000 FEET
KETONA DOLOMITE (Ckt)	THICK BEDDED, LIGHT BROWNISH GRAY TO YELLOWISH GRAY, CRYSTALLINE DOLOMITE.	0 TO 600 FEET
CONASAUGA FORMATION (Cc)	THIN BEDDED, DARK TO BROWNISH GRAY, SUBLITHOGRAPHIC SHALEY LIMESTONE	1100 TO 1900 FEET



**GENERALIZED GEOLOGIC STRATIGRAPHIC SECTION**  
 LAND DISPOSAL AREAS RFI  
 SLOSS INDUSTRIES CORPORATION  
 BIRMINGHAM, ALABAMA

FIGURE  
**2-3**

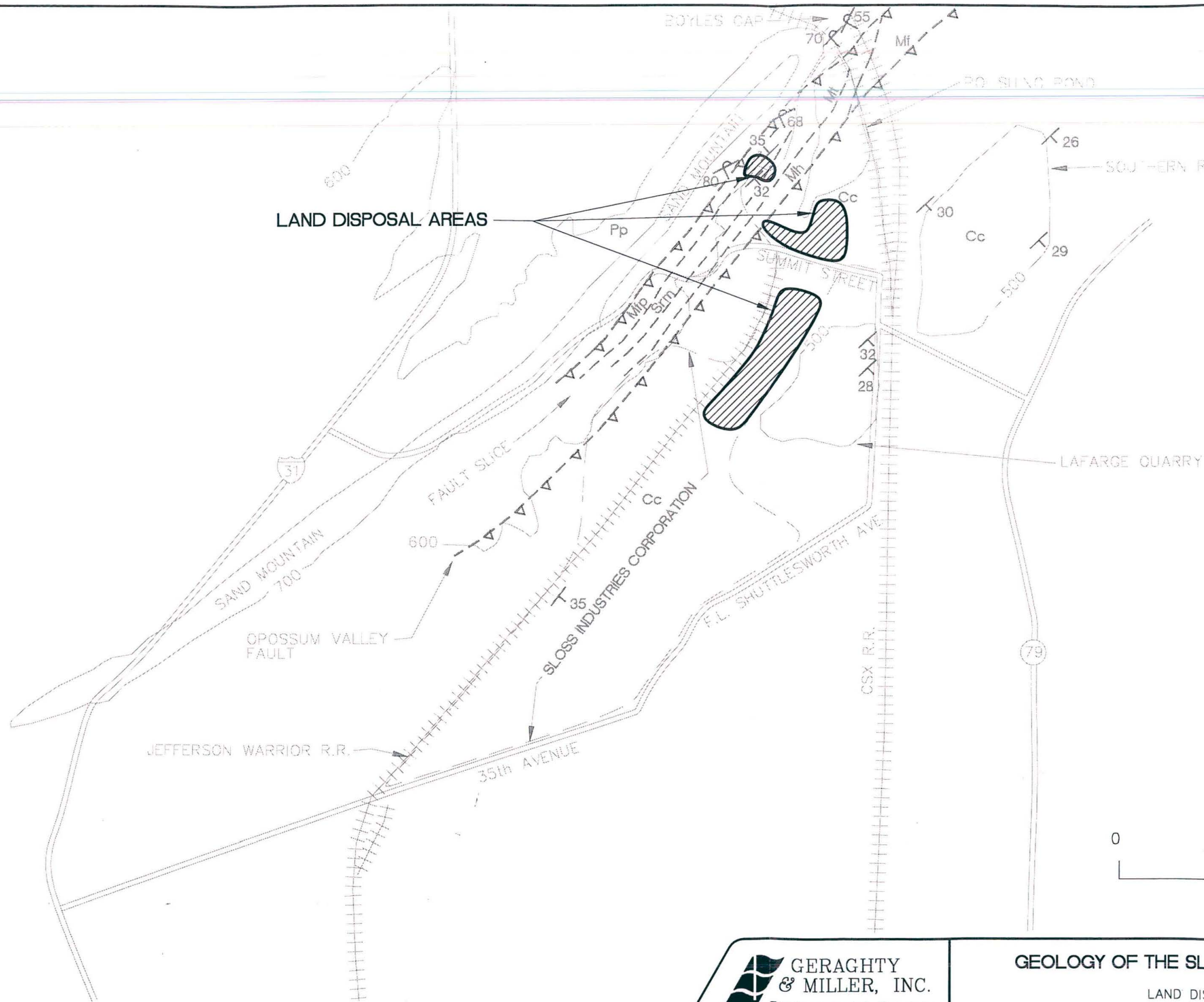


SOURCE: THOMAS AND BEARCE, 1986





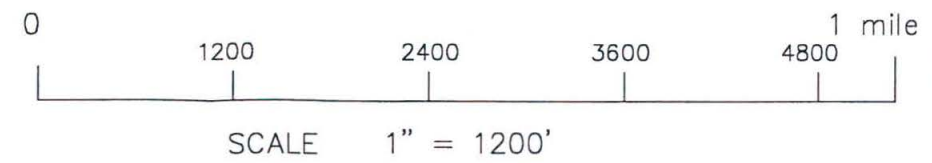
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**LEGEND**

POTTSVILLE Fm	Pp
FLOYD Sh	Mf
HARTSELLE Ss	Mh
TUSCUMBIA Ls	Mt
FT. PAYNE Cht	Mfp
RED MOUNTAIN Fm	Srm
CONASAUGA Fm	Cc

---▲--- THRUST FAULT  
--- FORMATION CONTACT  
--- EXISTING TOPOGRAPHY  
--- PROPERTY BOUNDARY  
T STRIKE AND DIP DIRECTION OF SEDIMENTARY BEDS  
⌊ STRIKE AND DIP DIRECTION OF OVERTURNED SEDIMENTARY BEDS  
80 DIP ANGLE

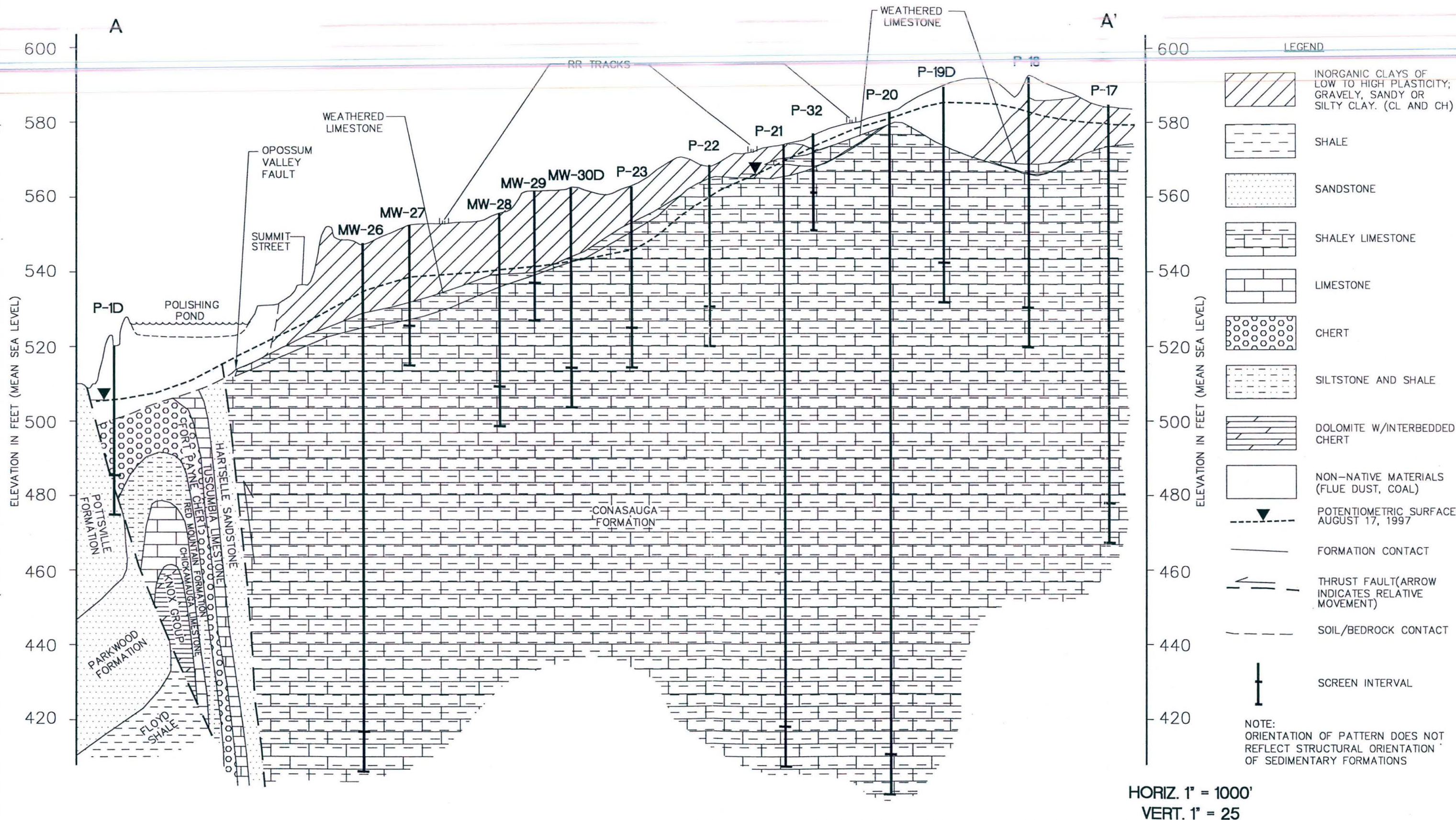


**GEOLOGY OF THE SLOSS PROPERTY AND VICINITY**  
LAND DISPOSAL AREAS RFI  
SLOSS INDUSTRIES  
BIRMINGHAM, ALABAMA

FIGURE  
**2-6**



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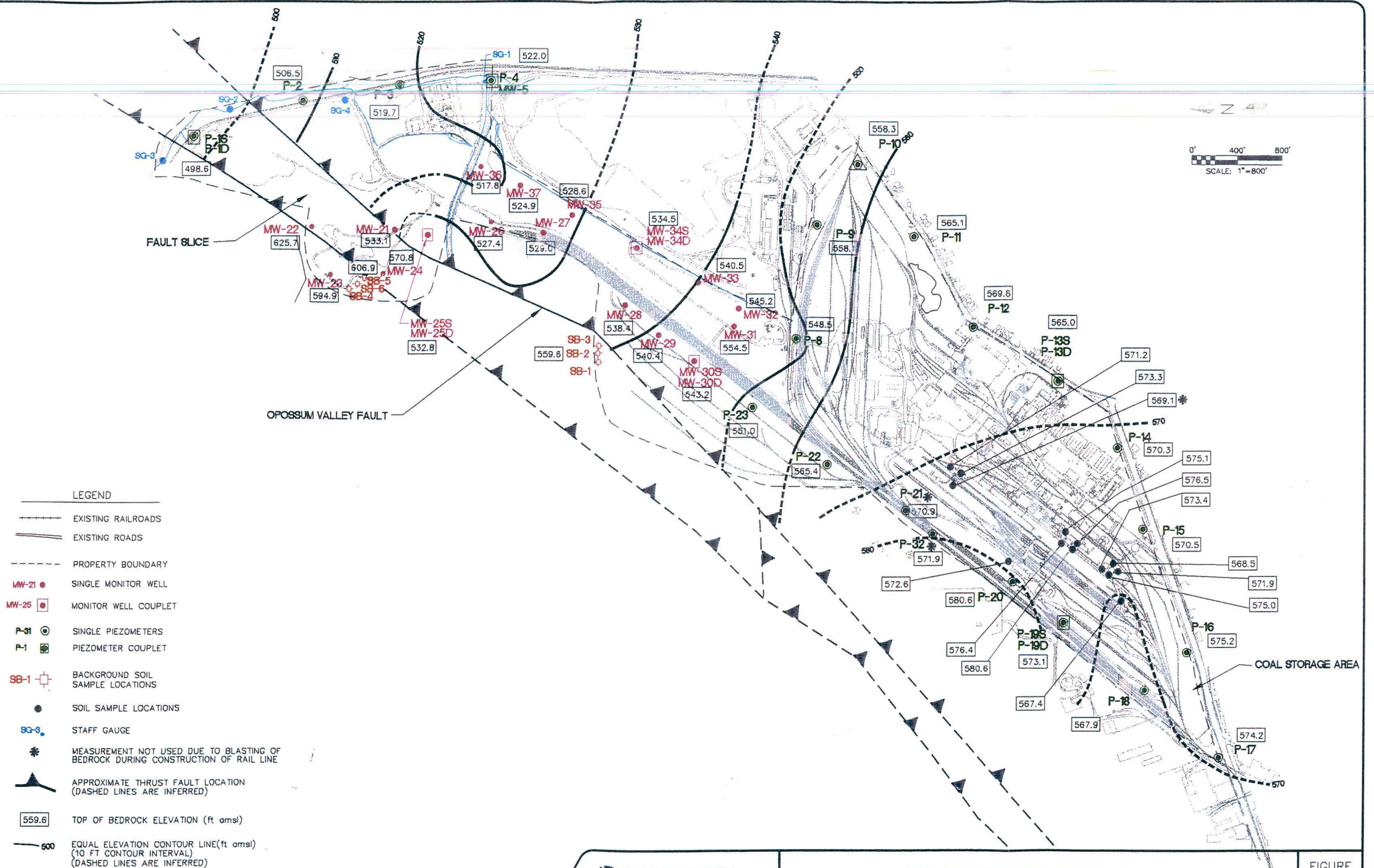




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- LEGEND**
- EXISTING RAILROADS
  - EXISTING ROADS
  - PROPERTY BOUNDARY
  - MW-21 ● SINGLE MONITOR WELL
  - MW-25 ■ MONITOR WELL COUPLET
  - P-31 ○ SINGLE PIEZOMETERS
  - P-1 ■ PIEZOMETER COUPLET
  - SB-1 □ BACKGROUND SOIL SAMPLE LOCATIONS
  - SOIL SAMPLE LOCATIONS
  - SG-3 ■ STAFF GAUGE
  - \* MEASUREMENT NOT USED DUE TO BLASTING OF BEDROCK DURING CONSTRUCTION OF RAIL LINE
  - ▲ APPROXIMATE THRUST FAULT LOCATION (DASHED LINES ARE INFERRED)
  - 559.6 TOP OF BEDROCK ELEVATION (ft amsl)
  - 500 EQUAL ELEVATION CONTOUR LINE (ft amsl) (10 FT CONTOUR INTERVAL) (DASHED LINES ARE INFERRED)
  - STORM-WATER DRAINAGE DITCH

NOTE: TOP OF BEDROCK WAS NOT CONTOURED ON SAND MOUNTAIN BECAUSE OF INSUFFICIENT DATA



**GERAGHTY & MILLER, INC.**  
Environmental Services

## TOP OF BEDROCK CONTOUR MAP

LAND DISPOSAL AREAS RFI  
SLOSS INDUSTRIES CORPORATION  
BIRMINGHAM, ALABAMA

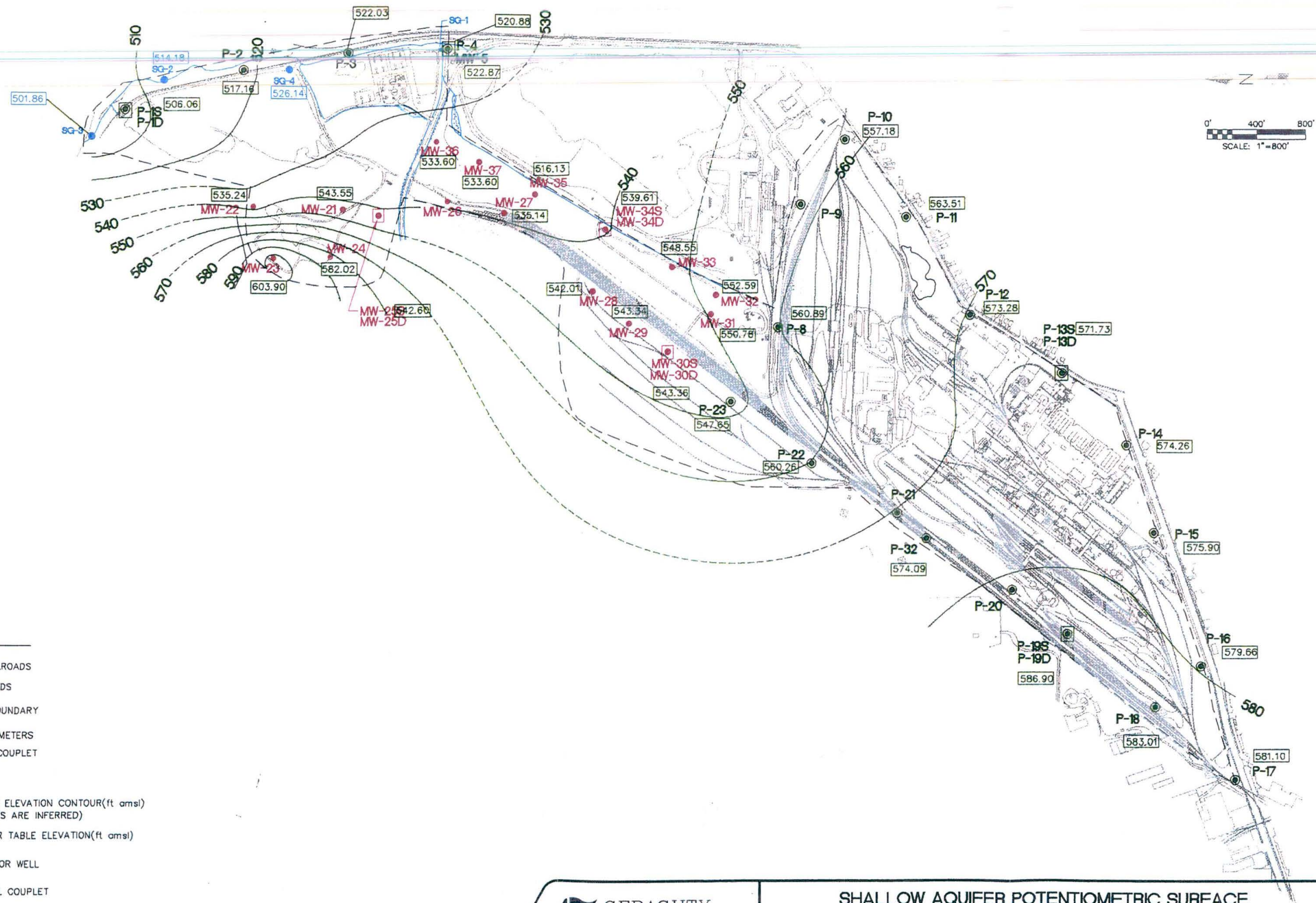
FIGURE

2-8



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- LEGEND**
- +—+—+— EXISTING RAILROADS
  - EXISTING ROADS
  - - - - - PROPERTY BOUNDARY
  - P-31 ○ SINGLE PIEZOMETERS
  - P-1 □ PIEZOMETER COUPLET
  - SG-3 ● STAFF GAGE
  - 580 — WATER TABLE ELEVATION CONTOUR(ft amsl)  
(DASHED LINES ARE INFERRED)
  - 572.92 — GROUNDWATER TABLE ELEVATION(ft amsl)
  - MW-21 ● SINGLE MONITOR WELL
  - MW-25 □ MONITOR WELL COUPLET
  - STORM-WATER DRAINAGE DITCH



**GERAGHTY & MILLER, INC.**  
Environmental Services

**SHALLOW AQUIFER POTENTIOMETRIC SURFACE  
ELEVATIONS, AUGUST 17, 1997**

LAND DISPOSAL AREAS RFI  
SLOSS INDUSTRIES CORPORATION  
BIRMINGHAM, ALABAMA

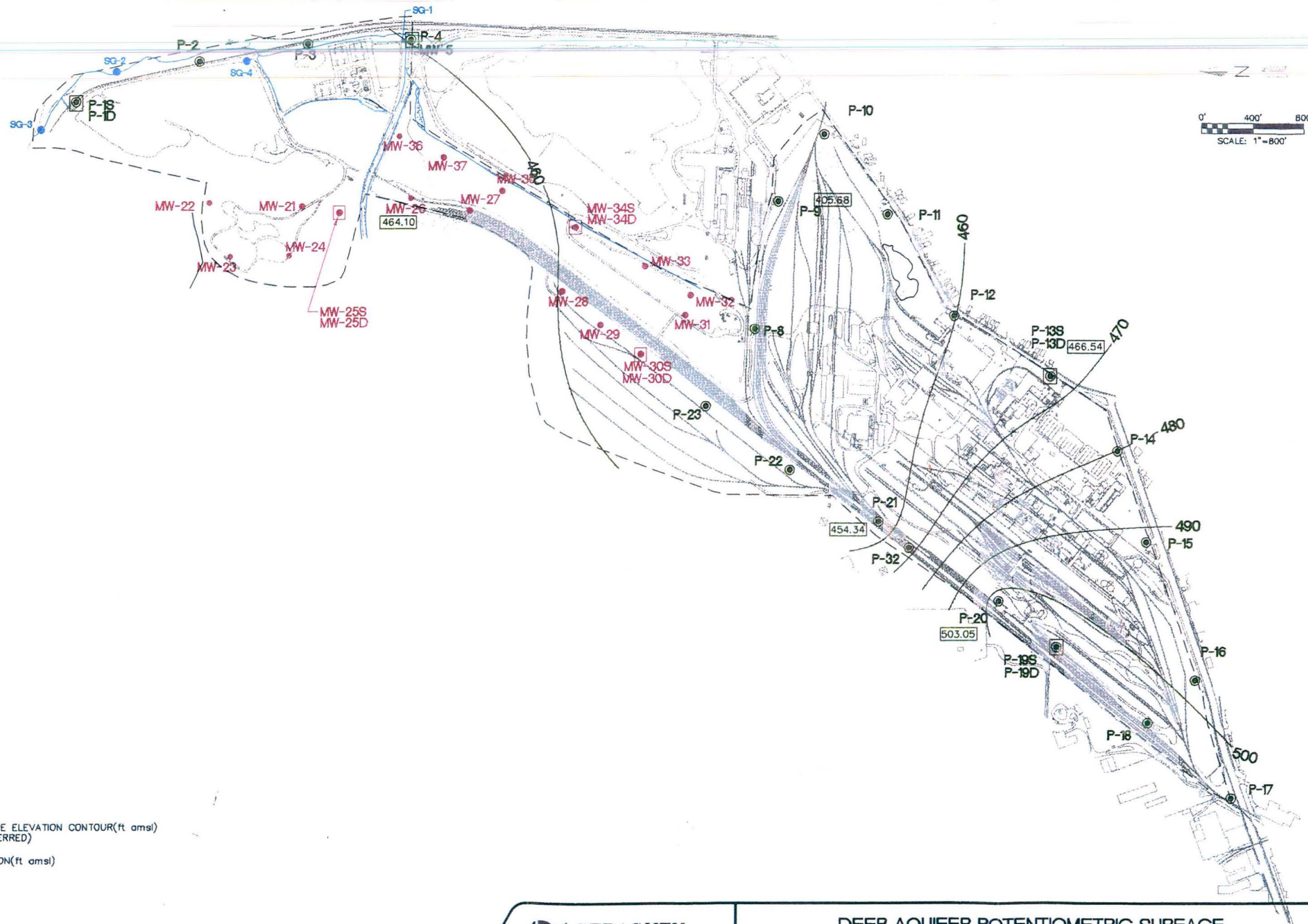
FIGURE

2-9



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- LEGEND**
- EXISTING RAILROADS
  - EXISTING ROADS
  - - - PROPERTY BOUNDARY
  - P-31 ● SINGLE PIEZOMETERS
  - P-1 ● PIEZOMETER COUPLET
  - SG-3 ● STAFF GAGE
  - 410 — POTENTIOMETRIC SURFACE ELEVATION CONTOUR(ft amsl)  
(DASHED LINES ARE INFERRED)
  - 572.92 — GROUNDWATER ELEVATION(ft amsl)
  - MW-21 ● SINGLE MONITOR WELL
  - MW-25 ● MONITOR WELL COUPLET
  - STORM-WATER DRAINAGE DITCH



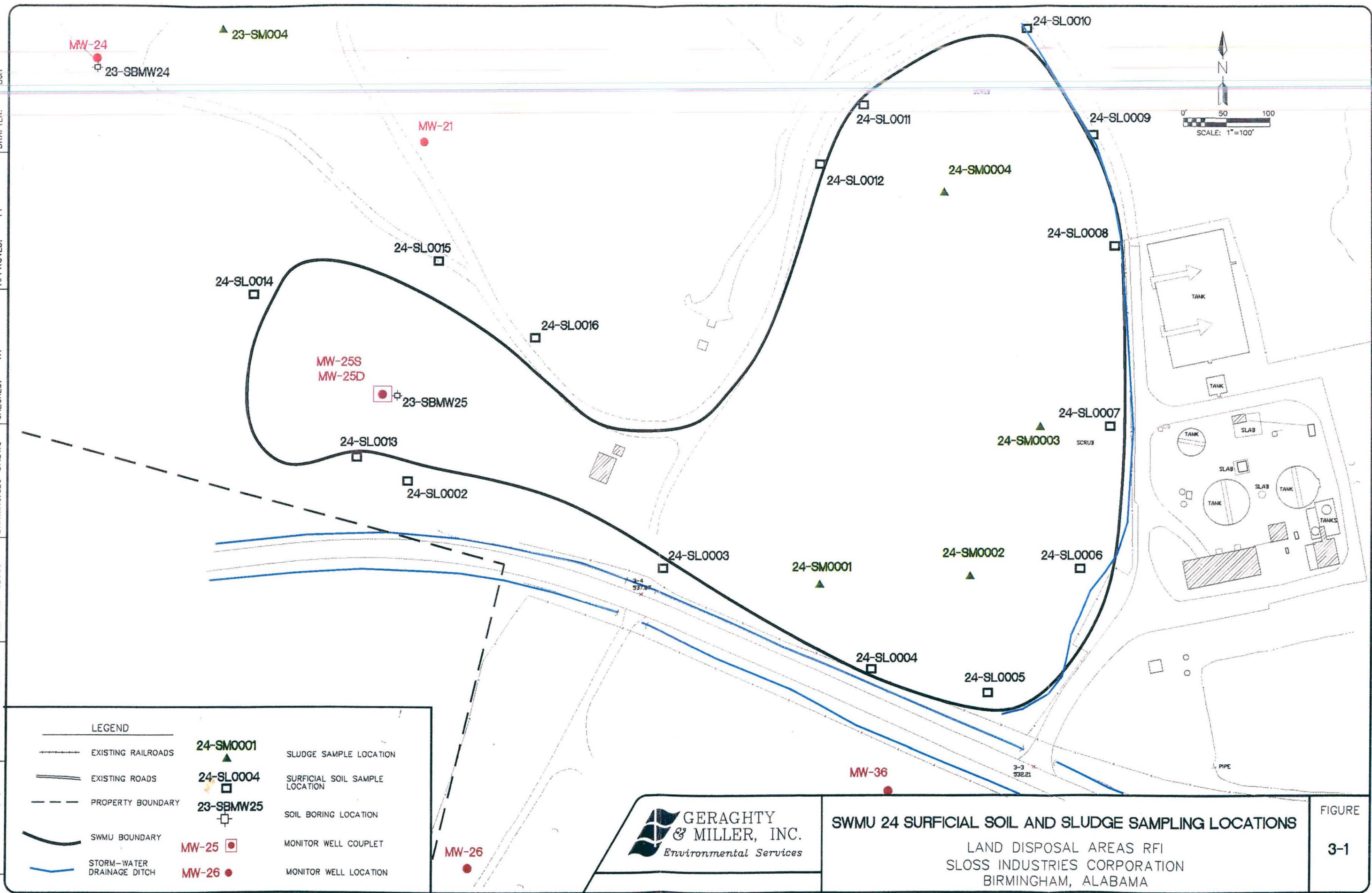
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Environmental Services

**DEEP AQUIFER POTENTIOMETRIC SURFACE  
ELEVATIONS, AUGUST 17, 1997**  
LAND DISPOSAL AREAS RFI  
SLOSS INDUSTRIES CORPORATION  
BIRMINGHAM, ALABAMA

FIGURE  
2-10

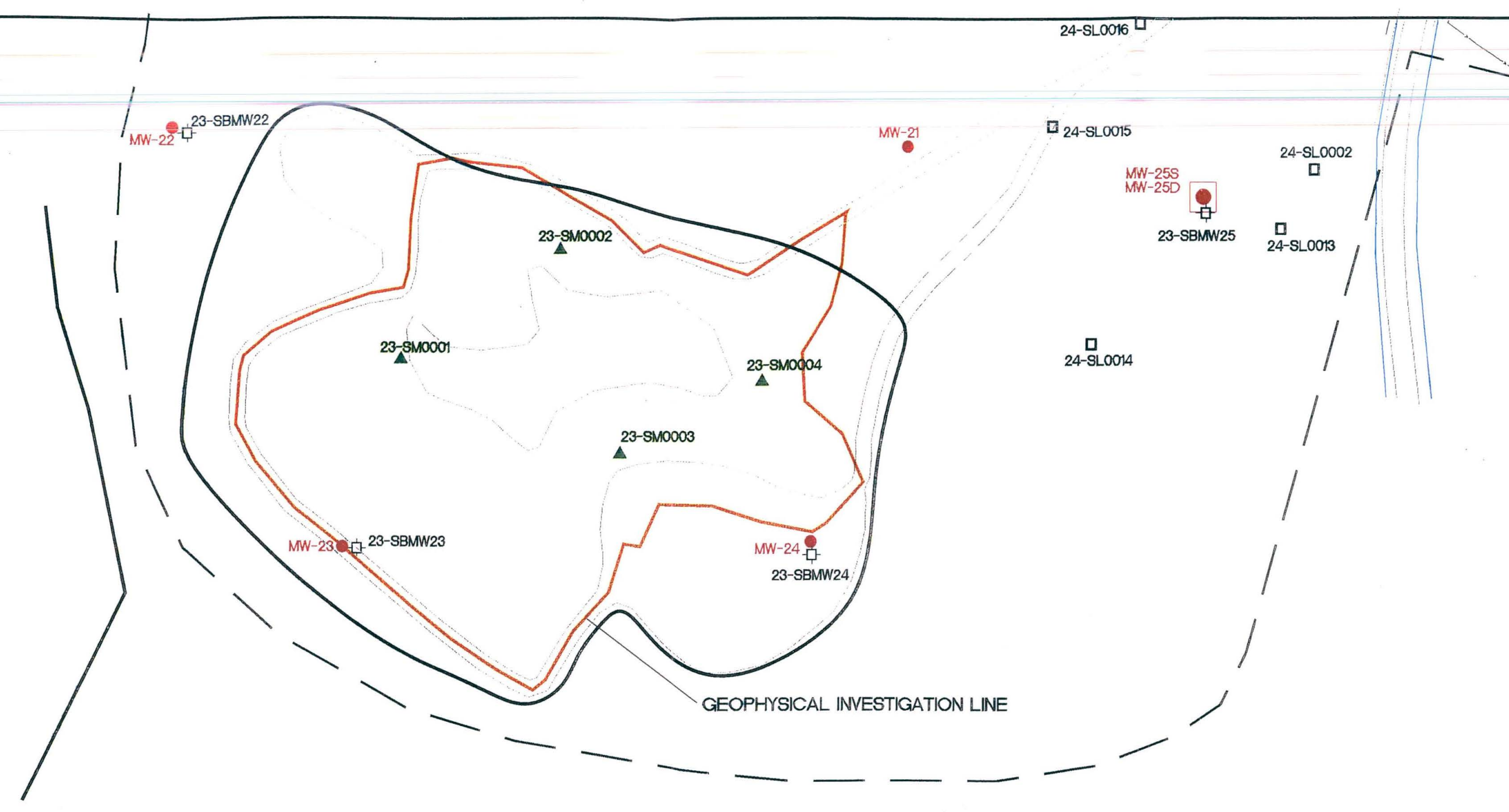


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DWG DATE: 12/5/97 | PRJCT NO.: TF0320.013 | FILE NO.: SLOSS | DRAWING: SLO-S10.DWG | CHECKED: KT | APPROVED: PF | DRAFTER: BJH



LEGEND			
	EXISTING RAILROADS	24-SM0003	SLUDGE SAMPLE LOCATION
	EXISTING ROADS	24-SL0014	SURFICIAL SOIL SAMPLING LOCATION
	PROPERTY BOUNDARY	23-SBMW24	SOIL BORING LOCATION
	SWMU BOUNDARY	MW-25	MONITOR WELL COUPLET
	GEOPHYSICAL INVESTIGATION LINE	MW-22	MONITOR WELL LOCATION
	STORM-WATER DRAINAGE DITCH		

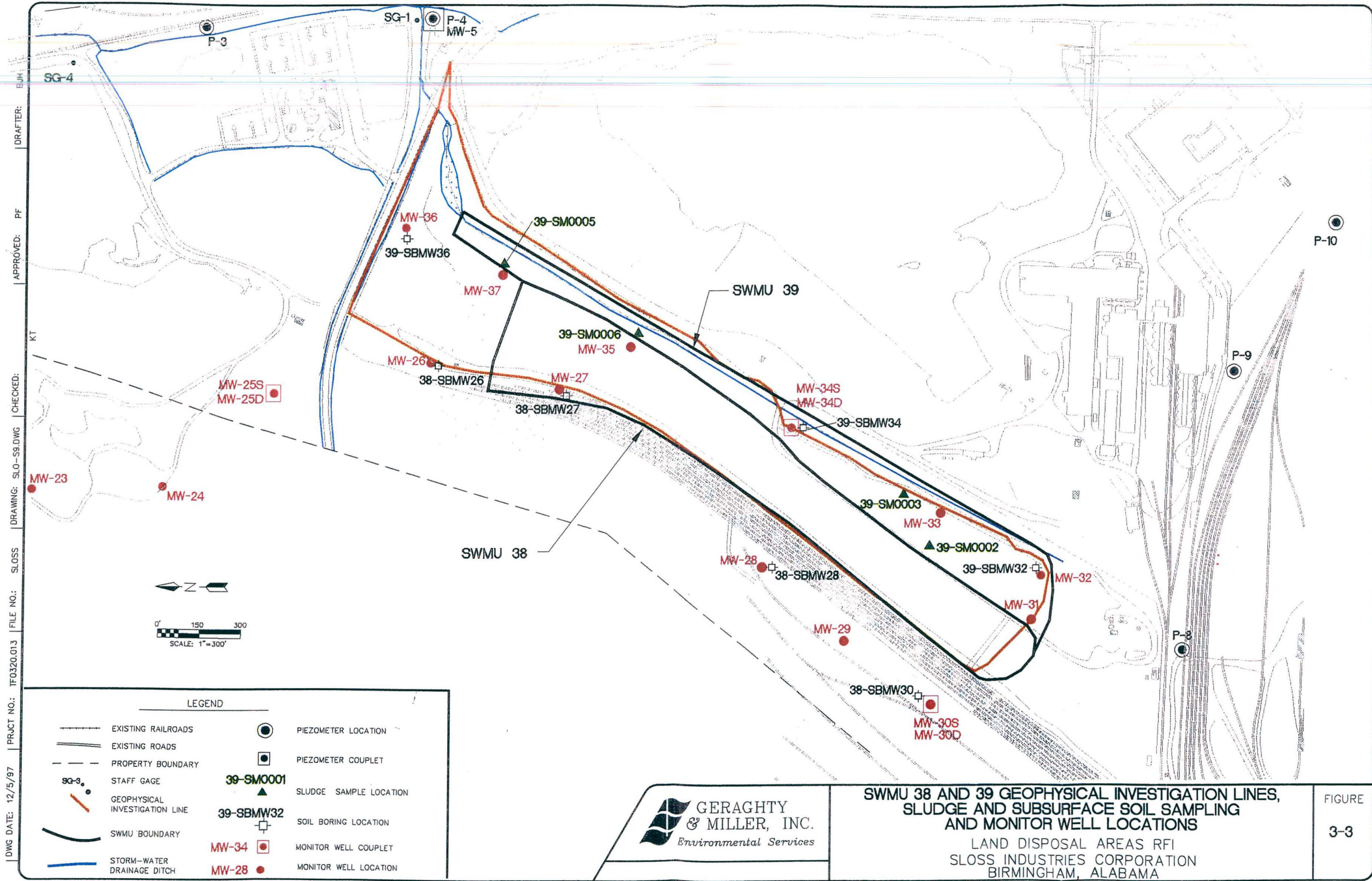


**SWMU 23 GEOPHYSICAL INVESTIGATION LINES, SLUDGE AND SUBSURFACE SOIL SAMPLING AND MONITOR WELL LOCATIONS**

LAND DISPOSAL AREAS RFI  
SLOSS INDUSTRIES CORPORATION  
BIRMINGHAM, ALABAMA

FIGURE  
3-2

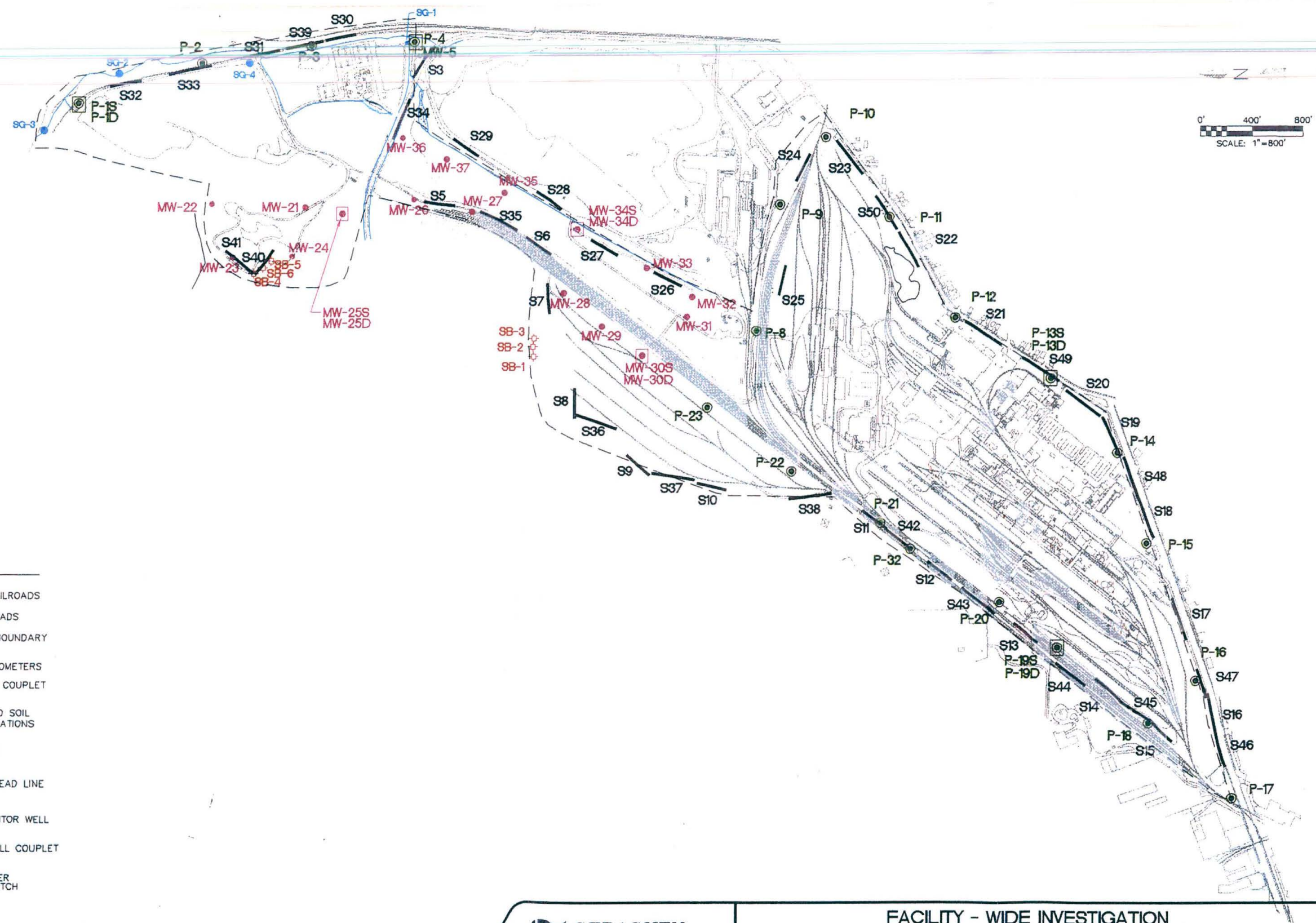






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- LEGEND
- EXISTING RAILROADS
  - EXISTING ROADS
  - PROPERTY BOUNDARY
  - P-31 ● SINGLE PIEZOMETERS
  - P-1 ● PIEZOMETER COUPLET
  - BACKGROUND SOIL SAMPLE LOCATIONS
  - SG-3 ● STAFF GAGE
  - S9 SEISMIC SPREAD LINE
  - MW-21 ● SINGLE MONITOR WELL
  - MW-25 ● MONITOR WELL COUPLET
  - STORM-WATER DRAINAGE DITCH



FACILITY - WIDE INVESTIGATION  
SEISMIC INVESTIGATION LOCATIONS

LAND DISPOSAL AREAS RFI  
SLOSS INDUSTRIES CORPORATION  
BIRMINGHAM, ALABAMA

DRAFTER: BJH

APPROVED: PF

JK

CHECKED:

SLOSS

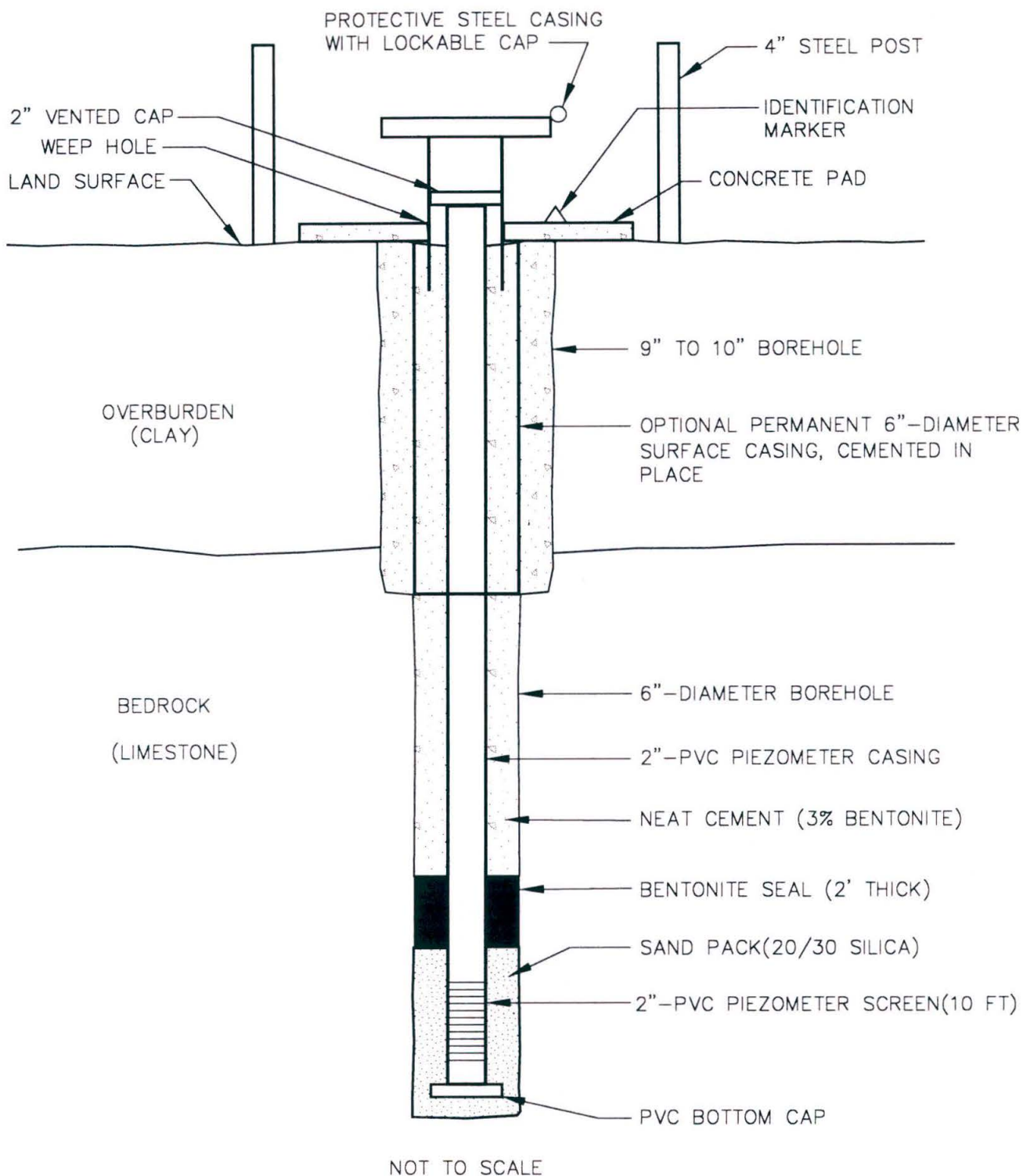
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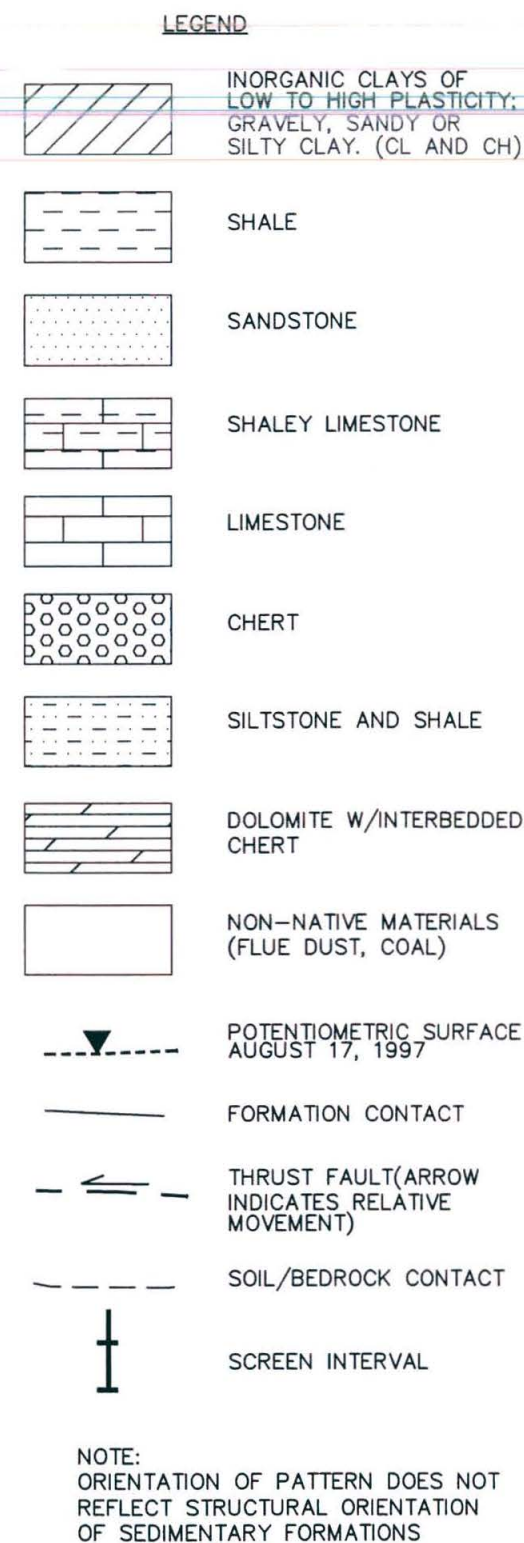
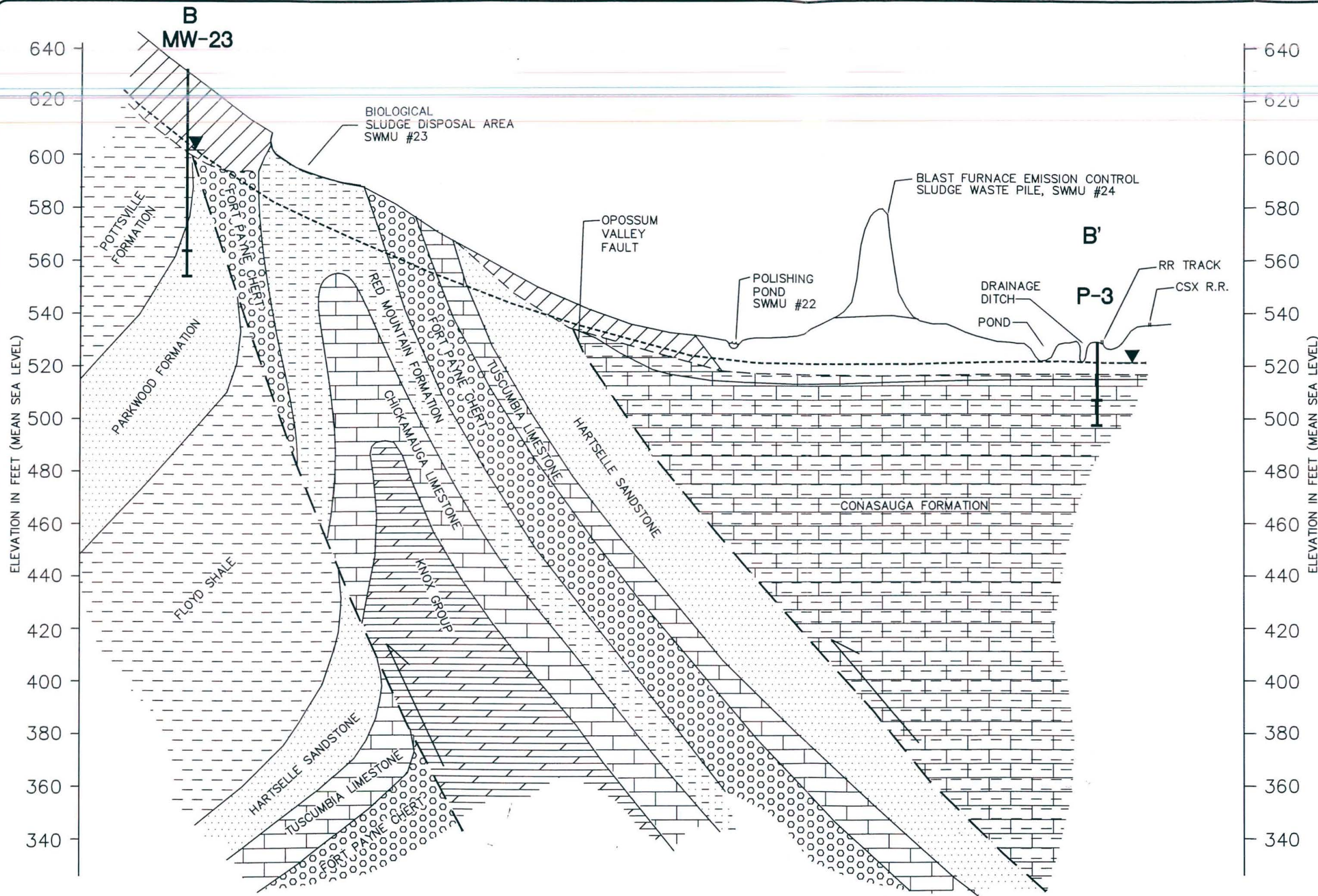
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DWG DATE: 12/5/97 | PRJCT NO.: TF0318.001 | FILE NO.: SLOSS | DRAWING: SLO-S1.DWG | CHECKED: KT | APPROVED: PF | DRAFTER: BUH



HORIZ. 1" = 200'  
VERT. 1" = 40'

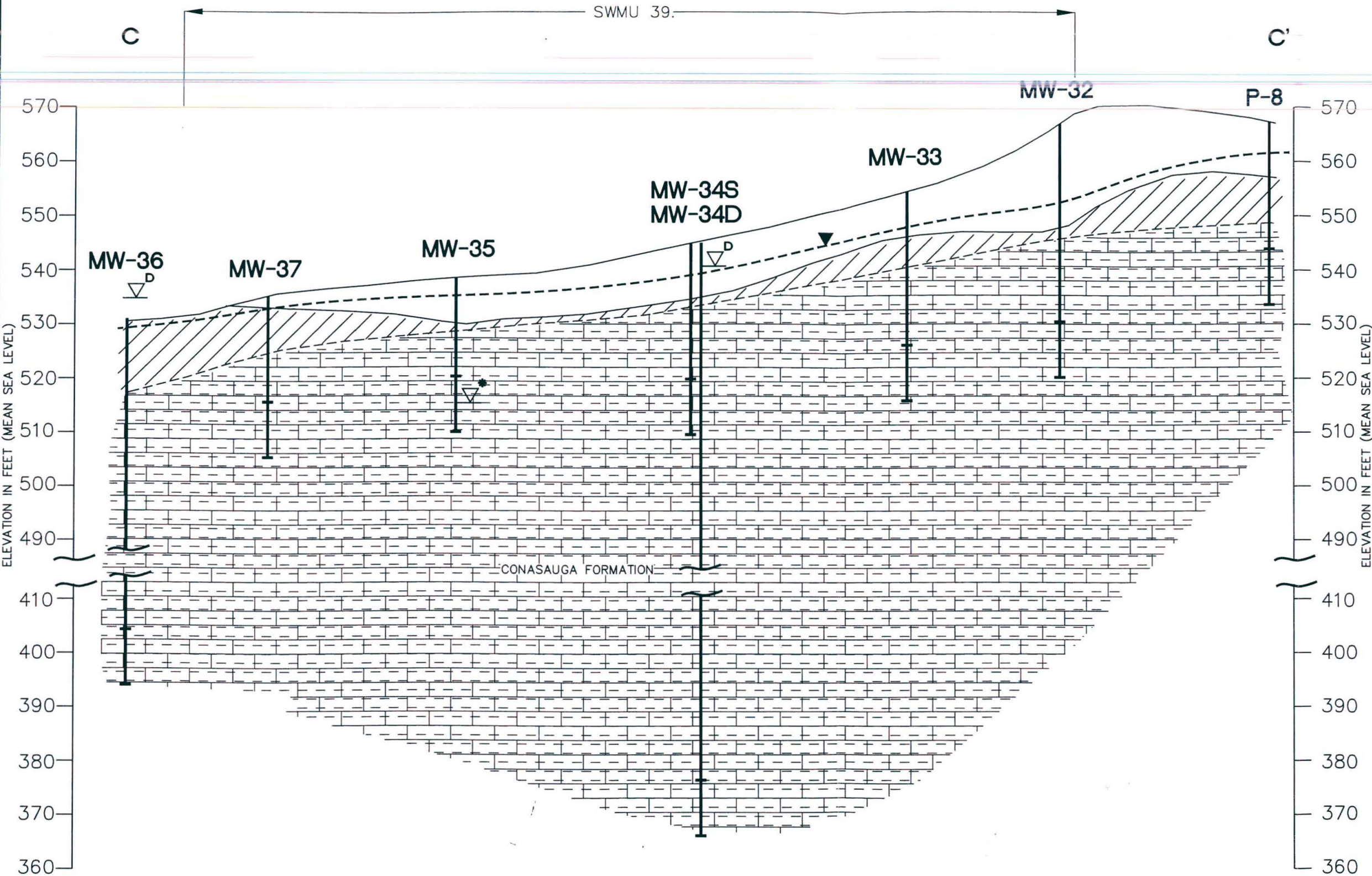


**GEOLOGICAL CROSS SECTION B - B'**  
LAND DISPOSAL AREAS RFI  
SLOSS INDUSTRIES CORPORATION  
BIRMINGHAM, ALABAMA

FIGURE  
4-1



DWG DATE: 12/5/97 | PRJCT NO.: TF0318.001 | FILE NO.: SLOSS | DRAWING: SLO-SECT.DWG | CHECKED: KT | APPROVED: PF | DRAFTER: E.J.H.



**LEGEND**

- INORGANIC CLAYS OF LOW TO HIGH PLASTICITY; GRAVELLY, SANDY OR SILTY CLAY. (CL AND CH)
- SHALEY LIMESTONE
- LIMESTONE
- NON-NATIVE MATERIALS (FLUE DUST, COAL)
- WATER TABLE ON AUGUST 17, 1997
- FORMATION CONTACT
- SOIL/BEDROCK CONTACT
- SCREEN INTERVAL
- DEEP WATER LEVEL
- WATER LEVEL NOT USED (MEASUREMENT TAKEN PRIOR TO FULL RECOVERY OF WELL)

NOTE:  
ORIENTATION OF PATTERN DOES NOT REFLECT STRUCTURAL ORIENTATION OF SEDIMENTARY FORMATIONS

HORIZ. 1" = 300'  
VERT. 1" = 20'

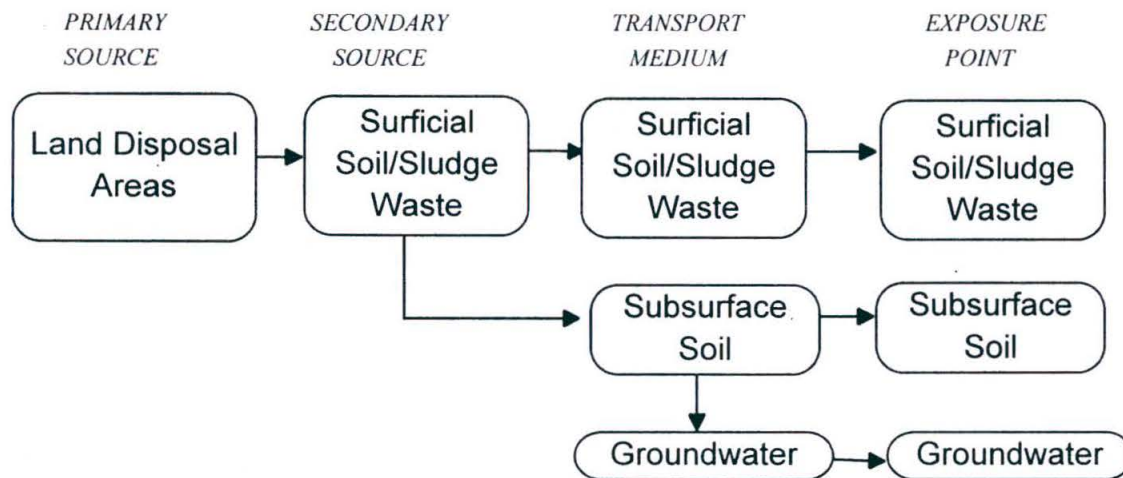


**GEOLOGICAL CROSS SECTION C - C'**  
LAND DISPOSAL AREAS RFI  
SLOSS INDUSTRIES CORPORATION  
BIRMINGHAM, ALABAMA

FIGURE  
**4-2**



RECEPTORS				
HUMAN			BIOTA	
CURRENT	FUTURE		TERRESTRIAL	AQUATIC
SITE WORKER	SITE WORKER	CONSTRUCTION WORKER		



Oral	•	•	•	•	
Dermal	•	•	•	•	
Inhalation	•	•	•		

Oral			•		
Dermal			•		
Inhalation			•		

Oral					
Dermal					
Inhalation					

**TABLE 1-1**  
**Summary of SWMUs**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SWMU No.	Name	Description	RFA Recommendation
<b><u>Land Disposal Area SWMUs</u></b>			
23	Biological Sludge Disposal Area	Land Disposal Area	FA
24	Blast Furnace Emission Control Sludge Waste Pile	Land Disposal Area	FA
38	Landfill	Land Disposal Area	FA
39	Blast Furnace Emission Control Sludge Waste Pile Near Landfill	Land Disposal Area	FA
<b><u>Coke Manufacturing Plant SWMUs</u></b>			
1	Quench Towers and Sump	Concrete tower and sump	FA
2	Quench Tower Pump Basins	Inground concrete tank	FA
3	Old Quench Tower Settling Basins	Inground concrete tank	FA
5	Coal Tar Storage Area Drain System	Inground concrete trough	FA
6	Spill Area Around Diesel Tank	Aboveground Tank	FA
7	Coal Tar Collection Sump in No. 1 Pump House	Concrete sump	FA
8	Flushing Liquor Decanter	Aboveground tank	FA
9	Flushing Liquor Decanter Sump	Concrete sump	FA
10	Coal Tar Decanter for No. 3 and No. 4 Coke Batteries	Aboveground tank	FA
11	Coal Tar Decanter for No. 5 Coke Battery	Aboveground tank	FA
12	Coal Tar Decanter for No. 1 and No. 2 Coke Batteries	Aboveground steel tank	FA
<b><u>Biological Treatment Facility (BTF) and Sewers SWMUs</u></b>			
4	BTF Sewer	Inground sewer line	FA
13	BTF Equalization Basin	Surface impoundment	FA
14	BTF Neutralization Basin	Inground concrete tank	NFA
15	BTF Primary Clarifier	Inground concrete tank	NFA
16	BTF Aeration Basin	Inground concrete tank	NFA
17	BTF Secondary Clarifier	Inground concrete tank	NFA
18	BTF Thickener	Inground concrete tank	NFA
19	BTF Digester	Inground concrete tank	NFA
20	Dewatering Machine	Filter press	NFA
21	BTF Emergency Basin	Surface impoundment	FA
22	Polishing Pond	Surface impoundment	FA
25	Storm-Water Runoff Sewer	Inground sewer line	FA
37	BTF Sewer Tar Trap	Inground concrete basin	FA

**TABLE 1-1**  
**Summary of SWMUs**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SWMU No.	Name	Description	RFA Recommendation
<b><u>Chemical Manufacturing Plant SWMUs</u></b>			
26	Chemical Manufacturing Plant Main Process Building Floor Drain	Tile-lined trough	FA
27	TSA 94 Building Drain Floor	Tile-lined trough	FA
28	Sulfonation Building Floor Drain	Stainless Steel trough	NFA
29	Chemical Product Tank Containment Area	Concrete containment area	FA
30	Centrifuge Wastewater Tank	Aboveground Steel Tank	NFA
31	Monohydrate Building Floor Drain and Sump	Concrete drain and sump	FA
32	BSC 94 Drum Storage Area	Plastic drums	NFA
33	BSC Plant Drum Storage Area	Plastic drums	NFA
34	BSC Wastewater Neutralization System	Concrete containment	NFA
35	Old Waste Pile at Mineral Wool Plant	Land Disposal Area	NFA
36	Maintenance Shop Used Oil Tank	Aboveground tank	FA

FA Further Action.  
NFA No Further Action.

**TABLE 2-1**  
**Summary of Constituents Detected in Background Soil Samples**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	USEPA RBC	950615-FW-00-SL0001(0-2)	950615-FW-00-SL0001(8-10)	950615-FW-00-SL0001(14-16)	950615-FW-00-SL0002(0-2)	950615-FW-00-SL0002(8-10)
SAMPLE DATE	Ingestion	06/15/95	06/15/95	06/15/95	06/15/95	06/15/95
MATRIX	Soil	SOIL	SOIL	SOIL	SOIL	SOIL
SL LOG NUMBER	Industrial <sup>1/</sup>	T511787*1	T511787*2	T511787*3	T511787*4	T511787*5
<b>Volatle Organic Compounds (ug/kg dw):</b>						
1,1,2-Trichloroethane	100,000	< 5.8	< 5.8	< 7.2	0.67 J	2.6 J
Methylene chloride (Dichloromethane)	760,000	< 5.8	3.6 J	< 7.2	4.3 J	< 6.1
Tetrachloroethene	110,000	< 5.8	< 5.8	< 7.2	0.58 J	< 6.1
Toluene	410,000,000	5.8 U	1.1 J	1.0 J	6.2 U	3.3 J
Trichloroethene	520,000	< 5.8	< 5.8	< 7.2	< 6.2	< 6.1
<b>Semivolatle Organics (ug/kg dw):</b>						
Benzo(a)anthracene	7,800	33 J	< 430	< 500	< 410	< 460
Benzo(a)pyrene	780	40 J	< 430	< 500	< 410	< 460
Benzo(b)fluoranthene	7,800	65 J	< 430	< 500	66 J	< 460
Benzo(k)fluoranthene	78,000	< 390	< 430	< 500	< 410	< 460
Bis(2-ethylhexyl)phthalate	410,000	< 390	< 430	< 500	< 410	< 460
Chrysene	780	43 J	< 430	< 500	< 410	< 460
Di-n-butylphthalate	200,000,000	< 390	< 430	< 500	< 410	< 460
Di-n-octylphthalate	41,000,000	< 390	< 430	< 500	< 410	< 460
Fluoranthene	82,000,000	58 J	< 430	< 500	61 J	< 460
Naphthalene	82,000,000	44 J	< 430	< 500	48 J	< 460
Phenanthrene	NS	30 J	< 430	< 500	< 410	< 460
Pyrene	61,000,000	52 J	< 430	< 500	< 410	< 460
<b>Metals (mg/kg dw):</b>						
Arsenic	3.8 <sup>2/</sup>	11	7.2	4.3	16	6.6
Barium	140,000	44	85	100	51	120
Beryllium	1.3	0.69	1.8	2.2	0.87	1.7
Chromium	10,000 <sup>3/</sup>	16	25	27	39	32
Copper	1,000,000	8.2	18	32	6.7	20
Lead	400 <sup>4/</sup>	23	8.7	9.7	20	9.3
Mercury	610	0.038	0.039	0.056	0.034	0.049
Nickel	41,000	4.7	22	40	5.5	36
Thallium	NS	< 1	1.3	< 1	1.1	< 1
Zinc	610,000	67	28	71	38	52
Percent Solids		85 %	78 %	67 %	82 %	72 %

Footnotes on Page 5

**TABLE 2-1**  
**Summary of Constituents Detected in Background Soil Samples**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	USEPA RBC	950615-FW-00-SL0002(12-14)	950615-FW-00-SL0003(0-2)	950615-FW-00-SL0003(6-8)	950615-FW-00-SL0003(10-12)	950615-FW-00-SL9003
SAMPLE DATE	Ingestion	06/15/95	06/15/95	06/15/95	06/15/95	06/15/95
MATRIX	Soil	SOIL	SOIL	SOIL	SOIL	SOIL
SL LOG NUMBER	Industrial <sup>1/</sup>	T511787*6	T511787*7	T511787*8	T511787*9	T511787*10
<b><u>Volatile Organic Compounds (ug/kg dw):</u></b>						
1,1,2-Trichloroethane	100,000	0.57 J <	6.1	0.74 J <	0.86 J <	6.1
Methylene chloride (Dichloromethane)	760,000	5.5 J <	2.8 J <	6.6 <	7.4 <	6.1
Tetrachloroethene	110,000	< 6.9 <	6.1 <	6.6 <	7.4 <	6.1
Toluene	410,000,000	1.1 J	6.1 U	1.4 J	2 J	6.1 U
Trichloroethene	520,000	< 6.9 <	6.1 <	6.6 <	7.4 <	6.1
<b><u>Semivolatile Organics (ug/kg dw):</u></b>						
Benzo(a)anthracene	7,800	< 480 <	410 <	460 <	490 <	410
Benzo(a)pyrene	780	< 480 <	410 <	460 <	490 <	410
Benzo(b)fluoranthene	7,800	< 480 <	410 <	460 <	490 <	410
Benzo(k)fluoranthene	78,000	< 480 <	410 <	460 <	490 <	410
Bis(2-ethylhexyl)phthalate	410,000	< 480	31 J	460 <	490 <	410
Chrysene	780	< 480 <	410 <	460 <	490 <	410
Di-n-butylphthalate	200,000,000	< 480 <	410 <	460 <	490 <	410
Di-n-octylphthalate	41,000,000	< 480 <	410 <	460 <	490	16 J
Fluoranthene	82,000,000	< 480 <	410 <	460 <	490 <	410
Naphthalene	82,000,000	< 480 <	410 <	460 <	490 <	410
Phenanthrene	NS	< 480 <	410 <	460 <	490 <	410
Pyrene	61,000,000	< 480 <	410 <	460 <	490 <	410
<b><u>Metals (mg/kg dw):</u></b>						
Arsenic	3.8 <sup>2/</sup>	5.7	14	9.7	5.1	21
Barium	140,000	200	53	100	95	50
Beryllium	1.3	2.5	0.51	1.8	2.6	0.60
Chromium	10,000 <sup>3/</sup>	43	20	33	27	46
Copper	1,000,000	29	5.0	21	22	5.9
Lead	400 <sup>4/</sup>	10	11	17	9.5	14
Mercury	610	0.065	0.055	0.035	0.15	0.038
Nickel	41,000	47	5.5	25	37	9.4
Thallium	NS	1.1 <	1 <	1 <	1 <	1
Zinc	610,000	68	16	29	49	27
Percent Solids		69 %	82 %	73 %	68 %	82 %

Footnotes on Page 5

**TABLE 2-1**  
**Summary of Constituents Detected in Background Soil Samples**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	USEPA RBC	950629-FW-00- SL0004(0-2)	950629-FW-00- SL0004(16-18)	950629-FW-00- SL0004(36-38)	950719-FW-00- SL0005 (0-2)
SAMPLE DATE	Ingestion	06/29/95	06/29/95	06/29/95	07/19/95
MATRIX	Soil	SOIL	SOIL	WATER	SOIL
SL LOG NUMBER	Industrial <sup>1/</sup>	T511949*4	T511949*5	T511949*1	T512142*3
<b><u>Volatile Organic Compounds (ug/kg dw):</u></b>					
1,1,2-Trichloroethane	100,000	< 5.7	< 5.6	< 5.8	< 5.6
Methylene chloride (Dichloromethane)	760,000	< 5.7	< 6.0	< 5.8	< 5.6
Tetrachloroethene	110,000	< 5.7	< 5.6	< 5.8	3.2 J
Toluene	410,000,000	< 5.7	< 5.6	< 5.8	< 5.6
Trichloroethene	520,000	< 5.7	< 5.6	< 5.8	12
<b><u>Semivolatile Organics (ug/kg dw):</u></b>					
Benzo(a)anthracene	7,800	< 400	< 380	< 400	< 360
Benzo(a)pyrene	780	< 400	< 380	< 400	< 360
Benzo(b)fluoranthene	7,800	< 400	< 380	< 400	< 360
Benzo(k)fluoranthene	78,000	< 400	< 380	< 400	< 360
Bis(2-ethylhexyl)phthalate	410,000	< 400	< 380	< 400	< 360
Chrysene	780	< 400	< 380	< 400	< 360
Di-n-butylphthalate	200,000,000	< 400	< 380	< 400	< 360
Di-n-octylphthalate	41,000,000	32.0 J	< 380	< 400	< 360
Fluoranthene	82,000,000	< 400	< 380	< 400	< 360
Naphthalene	82,000,000	< 400	< 380	< 400	< 360
Phenanthrene	NS	< 400	< 380	< 400	< 360
Pyrene	61,000,000	< 400	< 380	< 400	< 360
<b><u>Metals (mg/kg dw):</u></b>					
Arsenic	3.8 <sup>2/</sup>	13	1.9	3.8	6.0
Barium	140,000	28	21	43	58
Beryllium	1.3	0.44	0.97	1.4	0.52
Chromium	10,000 <sup>3/</sup>	22	8.6	17	37
Copper	1,000,000	8.1	7.8	10	12
Lead	400 <sup>4/</sup>	5.0	7.5	9.7	15
Mercury	610	< 0.030	< 0.030	< 0.030	0.035
Nickel	41,000	10	15	28	4.7
Thallium	NS	< 1.0	< 1.0	< 1.0	1.0
Zinc	610,000	25	14	70	29
Percent Solids		NA	NA	NA	92 %

Footnotes on Page 5

**TABLE 2-1**  
**Summary of Constituents Detected in Background Soil Samples**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	USEPA RBC	950719-FW-00-SL0005 (2-4)	950719-FW-00-SL0005 (4-6)	950719-FW-00-SL0006 (0-2)	950719-FW-00-SL0006 (10-12)	950719-FW-00-SL0006 (20-22)
SAMPLE DATE	Ingestion	07/19/95	07/19/95	07/19/95	07/19/95	07/19/95
MATRIX	Soil	SOIL	SOIL	SOIL	SOIL	SOIL
SL LOG NUMBER	Industrial <sup>1/</sup>	T512142*4	T512142*5	T512142*6	T512142*7	T512142*8
<b><u>Volatile Organic Compounds (ug/kg dw):</u></b>						
1,1,2-Trichloroethane	100,000	< 5.2	< 5.8	< 6.1	< 5.7	< 6.1
Methylene chloride (Dichloromethane)	760,000	< 5.2	< 5.8	1.9 J	1.4 J	< 6.1
Tetrachloroethene	110,000	5.2 U	5.8 U	20	< 5.7	< 6.1
Toluene	410,000,000	< 5.2	< 5.8	7.4	< 5.7	< 6.1
Trichloroethene	520,000	2.6 J	8.0	82	< 5.7	6.1 U
<b><u>Semivolatile Organics (ug/kg dw):</u></b>						
Benzo(a)anthracene	7,800	< 360	< 350	< 370	< 390	< 370
Benzo(a)pyrene	780	< 360	< 350	< 370	< 390	< 370
Benzo(b)fluoranthene	7,800	< 360	< 350	< 370	< 390	< 370
Benzo(k)fluoranthene	78,000	< 360	< 350	< 370	< 390	< 370
Bis(2-ethylhexyl)phthalate	410,000	< 360	< 350	< 370	< 390	< 370
Chrysene	780	< 360	< 350	< 370	< 390	< 370
Di-n-butylphthalate	200,000,000	72 J	< 350	< 370	< 390	< 370
Di-n-octylphthalate	41,000,000	18 J	< 350	38 J	180 J	76 J
Fluoranthene	82,000,000	< 360	< 350	< 370	< 370	< 370
Naphthalene	82,000,000	< 360	< 350	< 370	< 390	< 370
Phenanthrene	NS	< 360	< 350	< 370	< 390	< 370
Pyrene	61,000,000	< 360	< 350	< 370	< 390	< 370
<b><u>Metals (mg/kg dw):</u></b>						
Arsenic	3.8 <sup>2/</sup>	3.1	5.5	7.6	7.9	14
Barium	140,000	28	15	72	45	14
Beryllium	1.3	0.53	< 0.40	0.58	< 0.40	< 0.40
Chromium	10,000 <sup>3/</sup>	32	18	30	36	13
Copper	1,000,000	11	6.1	9.9	10	9.0
Lead	400 <sup>4/</sup>	11	8.0	10	14	11
Mercury	610	< 0.030	< 0.030	0.040	< 0.030	< 0.030
Nickel	41,000	< 4.0	< 4.0	15	7.8	< 4.0
Thallium	NS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc	610,000	40	11	45	21	8.6
Percent Solids		92 %	94 %	89 %	86 %	90 %

Footnotes on Page 5



**TABLE 2-1**  
**Summary of Constituents Detected in Background Soil Samples**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Page 5 of 5

**FOOTNOTES:**

NA Not Available.

NS No Standard.

J Positive results has been classified as qualitative during data validation or values are greater than the Method Detection Limit (MDL) but less than the Contract Required Quantitation Limit (CRQL) and Contract Required Detection Limit (CRDL). A B after the J (JB) indicates analyte was in a laboratory blank.

U Classified as nondetected.

1/ Source: USEPA Region III Risk-Based Concentrations (RBC), October 22, 1997

2/ RBC for arsenic as a carcinogen.

3/ RBC for Chromium VI.

4/ Residential RBC.

☐ Concentration Exceeds USEPA Industrial RBC.

**TABLE 2-2**  
**Summary of Monitor Well and Piezometer**  
**Construction Details and August 17, 1997 Groundwater Elevations**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Monitor Well/ Piezometer Identification	Previous Identification	SWMU Area	SWMU	Date Completed	Top of Casing (ft amsl)	Surface Elevation (ft amsl)	Monitor Well/ Piezometer Depth (ft bls)	Screen Interval (ft bls)	Depth to Water 8/17/97 (ft btoc)	Water Table Elevation 8/17/97 (ft amsl)
P-01D		FW		7/13/95	523.02	520.57	44.5	34.5 - 44.5	17	506.02
P-01S		FW		7/25/95	522.76	520.26	21	11 - 21	16.6	506.16
P-02		FW		7/18/95	531.53	528.5	35.5	25.5 - 35.5	13.92	517.61
P-03		FW		7/21/95	532.98	530.17	32	22 - 32	10.95	522.03
P-04		FW		7/26/95	532.4	529.48	37.5	27.5 - 37.5	11.52	520.88
P-08		FW		7/11/95	568.46	566.48	33	23 - 33	7.57	560.89
P-09		FW		7/6/95	568.22	565.64	160.5	150.5 - 160.5	162.54	405.68
P-10		FW		7/6/95	569.68	567.8	32.5	22.5 - 32.5	12.5	557.18
P-11		FW		7/8/95	569.95	567.56	27	17 - 27	6.44	563.51
P-12		FW		7/8/95	579.42	576.79	26.5	16.5 - 26.5	6.14	573.28
P-13D		FW		7/15/96	581.37	578.53	169.5	159.5 - 169.5	114.83	466.54
P-13S		FW		7/26/95	581.41	578.48	26	16 - 26	9.68	571.73
P-14		FW		7/13/96	583.37	580.82	75.5	65.5 - 75.5	9.11	574.26
P-15		FW		7/12/95	581.69	582.03	25.5	15.5 - 25.5	5.79	575.9
P-16a		FW		7/10/95	585.18	582.26	21.5	11.5 - 21.5	5.52	579.66
P-17		FW		6/29/95	586.16	583.74	115.5	105.5 - 115.5	5.06	581.1
P-18		FW		6/29/95	594.06	591.91	72.5	62.5 - 72.5	11.05	583.01
P-19D		FW		6/30/95	591.19	589.11	57.5	47.5 - 57.5	4.29	586.9
P-19S		FW		6/27/95	591.41	589.33	27.5	17.5 - 27.5	4.51	586.9
P-20		FW		7/31/95	585.2	582.57	198.3	188.3 - 198.3	82.15	503.05
P-21		FW		6/23/95	575.75	573.59	165.5	155.5 - 165.5	121.41	454.34
P-22		FW		6/17/95	570.82	568.44	48.5	38.5 - 48.5	10.56	560.26
P-23		FW		6/17/95	564.67	562.49	48.5	38.5 - 48.5	17.02	547.65
P-32		FW		8/4/95	579.71	576.89	27	17 - 27	5.62	574.09
MW-05		FW		NA	532.05	529.89	18	8 - 18	NM	NM

**TABLE 2-2**  
**Summary of Monitor Well and Piezometer**  
**Construction Details and August 17, 1997 Groundwater Elevations**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Monitor Well/ Piezometer Identification	Previous Identification	SWMU Area	SWMU	Date Completed	Top of Casing (ft amsl)	Surface Elevation (ft amsl)	Monitor Well/ Piezometer Depth (ft bls)	Screen Interval (ft bls)	Depth to Water 8/17/97 (ft btoc)	Water Table Elevation 8/17/97 (ft amsl)
MW-21		LD	23	8/9/97	558.85	556.58	39	29 - 39	15.3	543.55
MW-22	P-31	LD	23	7/20/95	628.86	625.7	118.5	108.5 - 118.5	93.62	535.24
MW-23	P-30	LD	23	7/27/95	635.88	632.94	78.5	68.5 - 78.5	31.98	603.9
MW-24	P-29	LD	23	7/26/95	594.99	591.81	73.3	63.3 - 73.3	12.97	582.02
MW-25D	P-28D	LD	23	7/26/95	559.63	556.87	66.3	56.3 - 66.3	17.17	542.46
MW-25S	P-28S	LD	23	7/20/95	559.67	556.76	45.5	35.5 - 45.5	17.87	541.8
MW-26	P-27	LD	38	6/20/95	549.58	547.41	140.5	130.5 - 140.5	85.48	464.1
MW-27	P-26	LD	38	6/16/95	554.97	552.15	37	27 - 37	16.09	538.88
MW-28	P-25	LD	38	6/15/95	558.32	556.44	58	48 - 58	16.31	542.01
MW-29		LD	38	8/12/97	563.89	561.86	36	26 - 36	20.55	543.34
MW-30D	P-24D	LD	38	6/17/95	564.43	562.26	58.5	48.5 - 58.5	20.67	543.76
MW-30S	P-24S	LD	38	6/20/95	564.68	562.21	34.5	24.5 - 34.5	21.17	543.51
MW-31		LD	39	8/13/97	571.52	569.46	46.5	36.5 - 46.5	20.74	550.78
MW-32	P-07	LD	39	6/21/95	569.43	567.24	47	37 - 47	16.84	552.59
MW-33		LD	39	8/11/97	556.73	554.46	39	29 - 39	8.18	548.55
MW-34D	P-06D	LD	39	6/21/95	546.1	544	178	168 - 178	5.69	540.41
MW-34S	P-06S	LD	39	6/26/95	545.98	543.84	34	24 - 34	6.37	539.61
MW-35		LD	39	8/14/97	542.46	540.12	29.5	19.5 - 29.5	26.33	516.13
MW-36 <sup>1/</sup>	P-05	LD	39	6/23/95	532.43	530.34	136.5	126.5 - 136.5	-2.71	535.14
MW-37		LD	38	8/11/97	537.44	535.36	30	20 - 30	3.84	533.6

ft amsl      Feet above mean sea level.  
ft bls      Feet below land surface.  
ft btoc      Feet below top of casing.  
NM      Not Measured  
FW      Facility-Wide  
LD      Land Disposal Areas  
<sup>1/</sup>      Flowing Well

**TABLE 2-3**  
**Summary of In-Situ Permeability Testing for**  
**Facility-Wide and Land Disposal Areas Investigations**  
**Sloss Industries Corporation**

Well	K (cm/sec) Slug In	K (cm/sec) Slug Out	i (ft/ft)	n	v (ft/min) Slug In	v (ft/min) Slug Out	v (ft/year) Slug In	v (ft/year) Slug Out
<b>Conasauga Limestone</b>								
P-2	8 E-04	4 E-04	0.025	0.20	2 E-04	1 E-04	100	60
P-3	2 E-03	1 E-03	0.025	0.20	4 E-04	3 E-04	200	200
P-4	1 E-06	4 E-08	0.025	0.01	6 E-06	2 E-07	3	0.1
P-8	3 E-03	4 E-03	0.025	0.20	8 E-04	1 E-03	400	600
P-10	3 E-03	3 E-03	0.025	0.20	7 E-04	7 E-04	400	300
P-11	2 E-04	2 E-04	0.025	0.20	6 E-05	5 E-05	30	20
P-12	4 E-05	8 E-07	0.010	0.01	8 E-05	2 E-06	40	0.9
P-12 DUP	7 E-07	7 E-08	0.010	0.01	1 E-06	1 E-07	0.7	0.07
P-13S	7 E-04	7 E-04	0.010	0.20	7 E-05	7 E-05	40	30
P-14	1 E-04	1 E-04	0.010	0.20	1 E-05	1 E-05	8	7
P-15	4 E-07	5 E-07	0.010	0.01	8 E-07	1 E-06	0.4	0.5
P-16	7 E-04	6 E-04	0.010	0.20	7 E-05	6 E-05	40	30
P-17	4 E-07	7 E-07	0.010	0.01	7 E-07	1 E-06	0.4	0.7
P-18	5 E-04	6 E-04	0.010	0.20	5 E-05	6 E-05	20	30
P-19S	5 E-03	3 E-03	0.010	0.20	5 E-04	3 E-04	300	200
P-19D	6 E-03	7 E-03	0.010	0.20	5 E-04	7 E-04	300	400
P-20	7 E-06	2 E-04	0.010	0.01	1 E-05	4 E-04	8	200
P-22	8 E-04	7 E-04	0.025	0.20	2 E-04	2 E-04	100	90
P-23	8 E-06	4 E-06	0.025	0.01	4 E-05	2 E-05	20	10
P-32	3 E-04	3 E-04	0.025	0.20	9 E-05	7 E-05	40	30
MW-5	1 E-03	9 E-03	0.025	0.20	3 E-04	2 E-03	200	1000
MW-21	2 E-05	3 E-05	0.100	0.20	2 E-05	3 E-05	10	10
MW-25S	2 E-04	1 E-04	0.100	0.20	2 E-04	1 E-04	100	70
MW-25D	1 E-05	6 E-06	0.100	0.20	1 E-05	6 E-06	8	3
MW-27	7 E-03	6 E-03	0.025	0.20	2 E-03	2 E-03	900	800
MW-28	1 E-03	1 E-03	0.025	0.20	3 E-04	3 E-04	100	100
MW-29	7 E-02	7 E-02	0.025	0.20	2 E-02	2 E-02	9000	9000
MW-30S	1 E-02	1 E-02	0.025	0.20	2 E-03	2 E-03	1000	1000
MW-30D	5 E-04	6 E-04	0.025	0.20	1 E-04	1 E-04	60	80
MW-31	2 E-04	1 E-04	0.025	0.20	4 E-05	3 E-05	20	20
MW-32	2 E-04	2 E-04	0.025	0.20	5 E-05	4 E-05	30	20
MW-33	2 E-04	2 E-04	0.025	0.20	5 E-05	5 E-05	30	20
MW-33 DUP	1 E-04	1 E-03	0.025	0.20	3 E-05	3 E-04	20	200
MW-34S	2 E-03	2 E-03	0.025	0.20	4 E-04	4 E-04	200	200
MW-34D	1 E-07	2 E-07	0.025	0.01	5 E-07	1 E-06	0.3	0.6
MW-35	1 E-07	4 E-08	0.025	0.01	5 E-07	2 E-07	0.3	0.1
MW-36	1 E-03	1 E-03	0.025	0.20	3 E-04	4 E-04	200	200
MW-37	2 E-03	2 E-03	0.025	0.20	6 E-04	5 E-04	300	300
Minimum	1 E-07	4 E-08					0.3	0.07
Maximum	7 E-02	7 E-02					9000	9000
<b>Sand Mountain</b>								
P-1S	1 E-03	1 E-03	0.025	0.20	3 E-04	3 E-04	200	100
P-1D	7 E-03	5 E-03	0.025	0.20	2 E-03	1 E-03	900	600
MW-22	3 E-03	2 E-03	0.100	0.20	3 E-03	2 E-03	1000	1000
MW-23	9 E-05	6 E-05	0.100	0.20	9 E-05	6 E-05	50	30
MW-24	5 E-05	2 E-05	0.100	0.20	5 E-05	2 E-05	20	10
Minimum	5 E-05	2 E-05					20	10
Maximum	7 E-03	5 E-03					1000	1000

**Footnotes:**

cm/sec - Centimeters per second.  
ft/ft - Feet per foot.  
ft/min - Feet per minute.  
ft/year - Feet per year.  
K - Hydraulic permeability.  
i - Hydraulic gradient.  
n - Porosity (void volume / total volume).  
v - Velocity =  $K i / n$ .

**TABLE 3-1**  
**Summary of Surficial Soil Samples Collected**  
**at SWMU 24 in June 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

<b>SWMU</b>	<b>Location</b>	<b>Sample ID</b>	<b>Sample Interval (ft bls)</b>	<b>Date Sampled</b>
SWMU24	24-SL0002	970618-LD-24-SL0002	0-1	6/18/97
	24-SL0003	970617-LD-24-SL0003	0-1	6/17/97
	24-SL0004	970617-LD-24-SL0004	0-1	6/17/97
	24-SL0005	970617-LD-24-SL0005	0-1	6/17/97
	24-SL0006	970617-LD-24-SL0006	0-1	6/17/97
	24-SL0006	970617-LD-24-SL9001	0-1	6/17/97
	24-SL0007	970617-LD-24-SL0007	0-1	6/17/97
	24-SL0008	970618-LD-24-SL0008	0-1	6/18/97
	24-SL0009	970618-LD-24-SL0009	0-1	6/18/97
	24-SL0010	970618-LD-24-SL0010	0-1	6/18/97
	24-SL0011	970618-LD-24-SL0011	0-1	6/18/97
	24-SL0012	970618-LD-24-SL0012	0-1	6/18/97
	24-SL0013	970618-LD-24-SL0013	0-1	6/18/97
	24-SL0014	970618-LD-24-SL0014	0-1	6/18/97
	24-SL0015	970618-LD-24-SL0015	0-1	6/18/97
	24-SL0016	970618-LD-24-SL0016	0-1	6/18/97

Note: Sample 970617-LD-24-SL9001 is the duplicate of sample 970617-LD-24-SL0006.

The ground was cleared of sludge before collecting the soil sample.

ft bls - feet below land surface.

**TABLE 3-2**  
**Summary of Sludge Samples Collected**  
**at SWMUs 23, 24, and 39 in June 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SWMU	Location	Sample ID	Date Sampled
SWMU 23	23-SM0001	970619-LD-23-SM0001	6/19/97
	23-SM0001	970619-LD-23-SM9001	6/19/97
	23-SM0002	970619-LD-23-SM0002	6/19/97
	23-SM0003	970619-LD-23-SM0003	6/19/97
	23-SM0004	970619-LD-23-SM0004	6/19/97
SWMU 24	24-SM0001	970619-LD-24-SM0001	6/19/97
	24-SM0001	970619-LD-24-SM9001	6/19/97
	24-SM0002	970619-LD-24-SM0002	6/19/97
	24-SM0003	970619-LD-24-SM0003	6/19/97
	24-SM0004	970619-LD-24-SM0004	6/19/97
SWMU 39	39-SM0002	970616-LD-39-SM0002	6/16/97
	39-SM0005	970619-LD-39-SM0005	6/19/97
	39-SM0006	970619-LD-39-SM0006	6/19/97
	39-SM0003	970616-LD-39-SM0003	6/16/97
	39-SM0003	970616-LD-39-SM9001	6/16/97

NOTE: Sample 970619-LD-23-SM9001 is the duplicate of 970619-LD-23-SM0001; sample 970619-LD-24-SM9001 is the duplicate of 970619-LD-24-SM0001; sample 970616-LD-39-SM9001 is the duplicate of 970616-LD-39-SM0003.

**TABLE 3-3**  
**Summary of Subsurface Soil Samples**  
**Collected at SWMUs 23, 38 and 39 in August 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SWMU	Location Name	Sample ID	Sample Interval (ft bls)	Date Sampled	Surface Elevation (ft amsl)	Sample Elevation (ft amsl)	Comments
SWMU 23	MW-21	970806-LD-23-SL0021(14-16)	14 - 16	8/6/97	556.58	542.58 - 540.58	
		970806-LD-23-SL0021(20-22)	20 - 22	8/6/97	556.58	536.58 - 534.58	
		970806-LD-23-SL9021(duplicate)	20 - 22	8/6/97	556.58	536.58 - 534.58	
	23-SBMW22	970806-LD-23-SL0022(0-2)	0-2	8/6/97	625.7	625.7 - 623.7	Soil boring located 3 ft S of MW-22.
	23-SBMW23	970806-LD-23-SL0023(12-14)	12-14	8/6/97	632.94	620.94 - 618.94	Soil boring located 3 ft S of MW-23.
		970806-LD-23-SL0023(24-26)	24-26	8/6/97	632.94	608.94 - 606.94	
	23-SBMW24	970805-LD-23-SL0024(7-9)	7-9	8/5/97	591.81	584.81 - 582.81	Soil boring located 5 ft W of MW-24.
		970805-LD-23-SL0024(14-16)	14-16	8/5/97	591.81	577.81 - 575.81	
	23-SBMW25	970805-LD-23-SL0025(19-21)	19-21	8/5/97	556.76	537.76 - 535.76	Soil boring located between MW-25S and MW-25D.
SWMU 38	38-SBMW26	970804-LD-38-SL0026(10-12)	10-12	8/4/97	547.41	537.41 - 535.41	Soil boring located 3 ft S of MW-26.
		970804-LD-38-SL9026 (duplicate)	10-12	8/4/97	547.41	537.41 - 535.41	
		970804-LD-38-SL0026(18-20)	18-20	8/4/97	547.41	529.41 - 527.41	
	38-SBMW27	970805-LD-38-SL0027(11-13)	11-13	8/5/97	552.15	541.15 - 539.15	
		970805-LD-38-SL0027(22-24)	22-24	8/5/97	552.15	530.15 - 528.15	Soil boring located 3 ft SE of MW-27.
		970808-LD-38-SL0027(22-24) <sup>11</sup>	22-24	8/8/97	552.15	530.15 - 528.15	
	38-SBMW28	970807-LD-38-SL0028(8-10)	8-10	8/7/97	556.44	548.44 - 546.44	Soil boring located 5 ft SE of MW-28.
		970807-LD-38-SL0028(13-15)	13-15	8/7/97	556.44	543.44 - 541.44	

**TABLE 3-3**  
**Summary of Subsurface Soil Samples**  
**Collected at SWMUs 23, 38 and 39 in August 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SWMU	Location Name	Sample ID	Sample Interval (ft bls)	Date Sampled	Surface Elevation (ft amsl)	Sample Elevation (ft amsl)	Comments
SWMU 38	MW-29	970807-LD-38-SL0029(15-17)	15 - 17	8/7/97	561.86	546.86 - 544.86	
		970807-LD-38-SL0029(19-21)	19 - 21	8/7/97	561.86	542.86 - 540.86	
	38-SBMW30	970807-LD-38-SL0030(9-11)	9-11	8/7/97	562.21	553.21 - 551.21	Soil boring located between MW-30S and MW-30D
		970807-LD-38-SL0030(17-19)	17-19	8/7/97	562.21	545.21 - 543.21	
	MW-37	970808-LD-38-SL0037(4-6)	4 - 6	8/8/97	535.36	531.36 - 529.36	
		970808-LD-38-SL0037(8-10)	8 - 10	8/8/97	535.36	527.36 - 525.36	
SWMU 39	MW-31						Samples were not collected since soil was not present.
	39-SBMW32						Samples were not collected since soil was not present.
	MW-33	970808-LD-39-SL0033(11-13)	11 - 13	8/8/97	554.46	543.46 - 541.46	
	39-SBMW34	970805-LD-39-SL0034(10-12)	10-12	8/5/97	543.84	533.84 - 531.84	Soil boring located between MW-34S and MW-34D
		970808-LD-39-SL0034(10-12) <sup>1/</sup>	10-12	8/8/97	543.84	533.84 - 531.84	
	MW-35	970808-LD-39-SL0035(10-12)	10 - 12	8/8/97	540.12	530.12 - 528.12	
	39-SBMW36	970804-LD-39-SL0036(5-7)	5-7	8/4/97	530.34	525.34 - 523.34	Soil boring located 5 ft S of MW-36.
		970804-LD-39-SL9036 (duplicate)	5-7	8/4/97	530.34	525.34 - 523.34	
		970804-LD-39-SL0036(10-12)	10-12	8/4/97	530.34	520.34 - 518.34	

ft bls - Feet below land surface.

ft amsl - Feet above mean sea level.

<sup>1/</sup> VOC sample was recollected because samples were broken during shipment.



**TABLE 3-4**  
**Results of Field Analyses for Groundwater Samples Collected in August 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Location	Sample ID	Date Collected	pH (std units)	Temperature (°C)	Conductivity (umhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Appearance
MW-21	970818-LD-23-GW0021	8/18/97	7.30	25	1,320	7.1	28.9	sl turbid
MW-22	970818-LD-23-GW0022	8/18/97	6.86	21	530	2.4	10.10	Clear
MW-23	970818-LD-23-GW0023	8/18/97	5.78	23	170	2.4	27	Sl turbid
MW-24	970818-LD-23-GW0024	8/18/97	5.91	21	290	2.3	>200	Turbid
MW-25D	970819-LD-23-GW0025D	8/19/97	10.42	24	1,000	2.1	>200	Clear
MW-25S	970819-LD-23-GW0025S	8/19/97	7.44	22	780	1.5	2.5	Clear
MW-26	970821-LD-38-GW0026	8/21/97	7.83	20	2,850	1.3	>200	Sheen
MW-27	970819-LD-38-GW0027	8/19/97	6.56	20	840	1.8	1.97	Clear
MW-28	970819-LD-38-GW0028	8/19/97	7.23	23	610	1.9	5.1	Clear
MW-29	970819-LD-38-GW0029	8/19/97	7.34	24	630	1.1	3.6	Clear
MW-30D	970821-LD-38-GW0030D	8/21/97	7.08	21	550	2.1	6.2	Clear
MW-30S	970821-LD-38-GW0030S	8/21/97	6.64	22	510	4.4	10.1	Clear
MW-31	970821-LD-39-GW0031	8/21/97	6.64	23	430	1.9	136.4	Sl turbid
MW-32	970821-LD-39-GW0032	8/21/97	6.63	24	450	3.7	9.2	Clear
MW-33	970820-LD-39-GW0033	8/20/97	6.40	22	1,140	2.8	0.8	Clear
MW-34S	970820-LD-39-GW0034S	8/20/97	6.55	21	1,490	1.3	8.85	Clear
MW-34D	970821-LD-39-GW0034D	8/21/97	8.47	23	1,160	2.2	>200	Sl turbid
MW-35	970821-LD-39-GW0035	8/21/97	7.47	22	1,690	6.0	5.7	Clear
MW-36	970821-LD-39-GW0036	8/21/97	9.16	22	1,010	1.2	2.4	Clear
MW-37	970821-LD-38-GW0037	8/21/97	6.97	26	510	1.5	4.7	Clear

std units    Standard Units  
°C            Degrees Centigrade  
umhos/cm    Micromhos per centimeter  
mg/L         Milligrams per liter  
NTU          Nephlemetric Turbidity Units

**TABLE 4-1**  
**Summary of Site Background Soil Concentration Ranges**  
**and USEPA Risk Based Concentrations**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

CHEMICAL	BACKGROUND CONCENTRATION RANGE	USEPA RBC SOIL INGESTION- RESIDENTIAL <sup>1/</sup>	USEPA RBC SOIL INGESTION- INDUSTRIAL <sup>1/</sup>
<b><u>Volatile Organic Compounds (ug/kg):</u></b>			
Acetone	ND	7,800,000	200,000,000
Toluene	1.0-7.4	16,000,000	410,000,000
<b><u>Semivolatile Organic Compounds (ug/kg):</u></b>			
* Acenaphthene	ND	4,700,000	120,000,000
* Acenaphthylene	ND	NS	NS
* Anthracene	ND	23,000,000	610,000,000
* Benzo(a)anthracene	33	880	7,800
* Benzo(a)pyrene	40	88	780
* Benzo(b)fluoranthene	65-66	880	7,800
* Benzo(g,h,i)perylene	ND	NS	NS
* Benzo(k)fluoranthene	ND	8,800	78,000
* Chrysene	43	88,000	780,000
* Dibenzo(a,h)anthracene	ND	88	780
* Fluoranthene	58-61	3,100,000	82,000,000
* Fluorene	ND	3,100,000	82,000,000
* Indeno(1,2,3-cd)pyrene	ND	880	7,800
* Phenanthrene	30	NS	NS
* Naphthalene	44-48	3,100,000	82,000,000
* Pyrene	52	2,300,000	61,000,000
<b><u>Metals (mg/kg):</u></b>			
Antimony, Total	ND	31	820
Arsenic, Total	1.9-21	0.43 <sup>2/</sup>	3.8 <sup>2/</sup>
Barium, Total	14-200	5,500	140,000
Beryllium, Total	0.44-2.6	0.15	1.3
Cadmium, Total	ND	39	1,000
Chromium, Total	8.6-46	390 <sup>3/</sup>	1,000 <sup>3/</sup>
Copper, Total	5.0-32	270,000	1,000,000
Lead, Total	5.0-23	400	NS
Mercury, Total	0.034-0.15	23	610
Nickel, Total	4.7-47	1,600	41,000
Silver, Total	ND	390	10,000
Zinc, Total	8.6-71	23,000	610,000
<b>Cyanide, Total (mg/kg):</b>	ND	1,600	41,000

ND - Not Detected. This constituent was not detected in site background soil samples.

NS - No Standard.

1/ Source: EPA Region III Risk-Based Concentrations (RBCs), October 22, 1997

2/ RBC for arsenic as a carcinogen RBC.

3/ Chromium VI RBC.

\* Polycyclic aromatic hydrocarbon (PAH).

**TABLE 4-2**  
**Summary of In-Situ Permeability Testing for Land Disposal Area SWMUs**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Well	K (cm/sec) Slug In	K (cm/sec) Slug Out	i (ft/ft)	n	v (ft/min) Slug In	v (ft/min) Slug Out	v (ft/year) Slug In	v (ft/year) Slug Out
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**SWMU 23**

MW-21	2 E-05	3 E-05	0.100	0.20	2 E-05	3 E-05	10	10
MW-22	3 E-03	2 E-03	0.100	0.20	3 E-03	2 E-03	1000	1000
MW-23	9 E-05	6 E-05	0.100	0.20	9 E-05	6 E-05	50	30
MW-24	5 E-05	2 E-05	0.100	0.20	5 E-05	2 E-05	20	10
MW-25S	2 E-04	1 E-04	0.100	0.20	2 E-04	1 E-04	100	70
MW-25D	1 E-05	6 E-06	0.100	0.20	1 E-05	6 E-06	8	3
Minimum	1 E-05	6 E-06					8	3
Maximum	3 E-03	2 E-03					1000	1000

**IN THE VICINITY OF SWMU 24**

P-2	8 E-04	4 E-04	0.025	0.20	2 E-04	1 E-04	100	60
P-3	2 E-03	1 E-03	0.025	0.20	4 E-04	3 E-04	200	200
P-4	1 E-06	4 E-08	0.025	0.01	6 E-06	2 E-07	3	0.1
MW-5	1 E-03	9 E-03	0.025	0.20	3 E-04	2 E-03	200	1000
MW-36	1 E-03	1 E-03	0.025	0.20	3 E-04	4 E-04	200	200
Minimum	1 E-06	4 E-08					3	0.1
Maximum	2 E-03	9 E-03					200	1000

**SWMU 38 and 39**

MW-27	7 E-03	6 E-03	0.025	0.20	2 E-03	2 E-03	900	800
MW-28	1 E-03	1 E-03	0.025	0.20	3 E-04	3 E-04	100	100
MW-29	7 E-02	7 E-02	0.025	0.20	2 E-02	2 E-02	9000	9000
MW-30S	1 E-02	1 E-02	0.025	0.20	2 E-03	2 E-03	1000	1000
MW-30D	5 E-04	6 E-04	0.025	0.20	1 E-04	1 E-04	60	80
MW-31	2 E-04	1 E-04	0.025	0.20	4 E-05	3 E-05	20	20
MW-32	2 E-04	2 E-04	0.025	0.20	5 E-05	4 E-05	30	20
MW-33	2 E-04	2 E-04	0.025	0.20	5 E-05	5 E-05	30	20
MW-33 DUP	1 E-04	1 E-03	0.025	0.20	3 E-05	3 E-04	20	200
MW-34S	2 E-03	2 E-03	0.025	0.20	4 E-04	4 E-04	200	200
MW-34D	1 E-07	2 E-07	0.025	0.01	5 E-07	1 E-06	0.3	0.6
MW-35	1 E-07	4 E-08	0.025	0.01	5 E-07	2 E-07	0.3	0.1
MW-36	1 E-03	1 E-03	0.025	0.20	3 E-04	4 E-04	200	200
MW-37	2 E-03	2 E-03	0.025	0.20	6 E-04	5 E-04	300	300
Minimum	1 E-07	4 E-08					0.3	0.1
Maximum	7 E-02	7 E-02					9000	9000

**Footnotes:**

cm/sec - Centimeters per second.

ft/ft - Feet per feet.

ft/min - Feet per minute.

ft/year - Feet per year.

K - Hydraulic permeability.

i - Hydraulic gradient.

n - Porosity (void volume / total volume).

v - Velocity =  $K i / n$ .

**TABLE 4-3**  
**Summary of Total Constituents Detected in Sludge**  
**Samples Collected at SWMU 23 in June 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	970619-LD-23 SM0001	970619-LD-23-SM9001	970619-LD-23-SM0002	970619-LD-23-SM0003	970619-LD-23 SM0004
LAB ID	84273-11	84273-17	84273-14	84273-15	84273-16
SAMPLE DATE	6/19/97	6/19/97	6/19/97	6/19/97	6/19/97
<b><u>Volatile Organic Compounds (ug/kg):</u></b>					
2-Butanone (MEK)	530	<1500	<2300	250	<1500
Acetone	1200	<1500	<2300	670	<1500
Ethylbenzene	<28	<150	<230	<24	220
Toluene	<28	<150	5100	200	520
Xylenes	96	<150	650	<24	900
<b><u>Semivolatile Organic Compounds (ug/kg):</u></b>					
Acenaphthylene	2000	4200	11000	8100	2700
Anthracene	<1800	<1900	3800	<1600	<1900
Benzo(a)anthracene	7800	15000	27000	45000	5300
Benzo(a)pyrene	7200	12000	31000	47000	6500
Benzo(b)fluoranthene	6100	11000	30000	57000	3800
Benzo(g,h,i)perylene	7200	8200	24000	40000	5000
Benzo(k)fluoranthene	6100	5000	21000	27000	5300
Chrysene	6100	10000	16000	39000	3700
Dibenzo(a,h)anthracene	<1800	<1900	3200	<1600	<1900
Fluoranthene	7200	10000	25000	24000	5700
Fluorene	<1800	<1900	5400	<1600	<1900
Indeno(1,2,3-cd)pyrene	6700	8200	21000	39000	5500
Naphthalene	<1800	<1900	<3000	<1600	4100
Phenanthrene	2600	3500	14000	<1600	4400
Pyrene	7200	14000	19000	31000	3600
4-methylphenol (p-cresol)	2700	2800	<3000	3000	10000
Total PAHs	66200	101100	251400	357100	55600

**TABLE 4-3**  
**Summary of Total Constituents Detected in Sludge**  
**Samples Collected at SWMU 23 in June 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	970619-LD-23 SM0001	970619-LD-23-SM9001	970619-LD-23-SM0002	970619-LD-23-SM0003	970619-LD-23-SM0004
LAB ID	84273-11	84273-17	84273-14	84273-15	84273-16
SAMPLE DATE	6/19/97	6/19/97	6/19/97	6/19/97	6/19/97

**Metals (mg/kg):**

Arsenic, Total	11 J	6.3 J	11.5 J	42 J	<6 UJ
Barium, Total	160	130	450	390	250
Chromium, Total	65	64	130	190	130
Copper, Total	32	31	110	240	87
Lead, Total	18	18	51	50	35
Mercury, Total	<1.396	1.9	8.6	7.7	7.2
Nickel, Total	68	68	140	270	200
Selenium, Total	45	50	150	117	62
Silver, Total	<5.6	<5.7	8	5.7	<6
Zinc, Total	140 J	120 J	300 J	280 J	220 J

<b>Cyanide, Total (mg/kg)</b>	20.3 J	16.1 J	<1.8 R	136 J	4 J
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<b>Percent Solids (%)</b>	18	18	12	21	17
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NOTE: Sludge sample 970619-LD-23-SM9001 is the duplicate of 970619-LD-23-SM0001.

J - Positive results have been classified as qualitative during data validation.

UJ - Analyte was not detected at or above the indicated concentration and has been classified as qualitative.

R - Data classified as unusable.

ug/kg - Micrograms per kilogram.

mg/kg - Milligrams per kilogram.

**TABLE 4-4**  
**Summary of TCLP Constituents Detected in Sludge**  
**Samples Collected at SWMU 23 in June 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	RCRA TC Level	970619-LD- 23-SM0001	970619-LD- 23-SM9001	970619-LD- 23-SM0002	970619-LD- 23-SM0003	970619-LD-23 SM0004
LAB ID		84273-11	84273-17	84273-14	84273-15	84273-16
SAMPLE DATE		6/19/97	6/19/97	6/19/97	6/19/97	6/19/97
<b><u>TCLP-Volatile Organic Compounds (mg/L):</u></b>		ND	NA	ND	ND	ND
<b><u>TCLP-Semivolatile Organic Compounds (mg/L):</u></b>		ND	NA	ND	ND	ND
<b><u>TCLP-Organochlorine Pesticides (mg/L):</u></b>		ND	NA	ND	ND	ND
<b><u>TCLP-Chlorinated Herbicides (mg/L):</u></b>		ND	NA	ND	ND	ND
<b><u>TCLP-Metals (mg/L):</u></b>						
Barium	100	12	NA	18	7.6	3.5
Chromium	5	<0.03	NA	0.18	<0.01	0.12

NA Not Analyzed.  
ND Not detected. Analytes in this group were all below their respective detection limits.  
mg/L Milligrams per liter.

**TABLE 4-5**  
**Summary of Constituents Detected in Subsurface**  
**Soil Samples Collected at SWMU 23 in August 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	USEPA RBC	970806-LD-23-SL0021(14-16)	970806-LD-23-SL0021(20-22)	970806-LD-23-SL9021	970806-LD-23-SL0022(0-2)	970806-LD-23-SL0023(12-14)
LAB ID	Soil Ingestion-	85785-6	85785-5	85785-7	85785-2	85785-3
SAMPLE DATE	Industrial <sup>1/</sup>	8/6/97	8/6/97	8/6/97	8/6/97	8/6/97
<b><u>Volatile Organic Compounds (ug/kg):</u></b>						
Acetone	200,000,000	<72	<75	<77	<57	<60
<b><u>Semivolatile Organic Compounds (ug/kg):</u></b>		ND	ND	ND	ND	ND
<b><u>Metals (mg/kg):</u></b>						
Arsenic, Total	3.8 <sup>2/</sup>	3.6 J	2.2 J	2 J	4.6	2.9
Barium, Total	140,000	39 J	82	63 J	25	14
Beryllium, Total	1.3	<0.7 UJ	<0.7	<0.8 UJ	<0.6	<0.6
Cadmium, Total	1,000	<0.7 UJ	<0.7 UJ	<0.8 UJ	<0.6 UJ	<0.6 UJ
Chromium, Total	10,000 <sup>3/</sup>	<1.4 UJ	9.3	15 UJ	11	<1.2
Copper, Total	1,000,000	<2.9 UJ	<3	<3.1 UJ	<2.3	<2.4
Lead, Total	400 <sup>4/</sup>	<3.6	<3.7	<3.9	13	<3
Nickel, Total	41,000	<2.9 UJ	28	23 UJ	<2.3	<2.4
Zinc, Total	610,000	41	63	54	41	32
<b>Cyanide, Total (mg/kg):</b>	41000	0.43	0.34	0.46	<0.2	0.31
<b>Percent Solids (%)</b>	NS	69	67	65	88	84

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**TABLE 4-5**  
**Summary of Constituents Detected in Subsurface**  
**Soil Samples Collected at SWMU 23 in August 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	USEPA RBC	970806-LD-23-SL0023(24-26)	970805-LD-23-SL0024(7-9)	970805-LD-23-SL0024(14-16)	970805-LD-23-SL0025(19-21)
LAB ID	Soil Ingestion-	85785-4	85657-17	85657-19	85657-16
SAMPLE DATE	Industrial <sup>1/</sup>	8/6/97	8/5/97	8/5/97	8/5/97
<b><u>Volatile Organic Compounds (ug/kg):</u></b>					
Acetone	200,000,000	<61	<61	<72	110
<b><u>Semivolatile Organic Compounds (ug/kg):</u></b>		ND	ND	ND	ND
<b><u>Metals (mg/kg):</u></b>					
Arsenic, Total	3.8 <sup>2/</sup>	6.3	13	30	3.8
Barium, Total	140,000	76	43	53	180
Beryllium, Total	1.3	<0.6	<0.6	0.7	<0.6
Cadmium, Total	1,000	<0.6 UJ	2.5	2.4	<0.6
Chromium, Total	10,000 <sup>3/</sup>	<1.2	7	19	15
Copper, Total	1,000,000	<2.5	5	22	<2.5
Lead, Total	400 <sup>4/</sup>	10	4.4	19	<3.2
Nickel, Total	41,000	8.8	45	66	18
Zinc, Total	610,000	70	83	430	47
<b>Cyanide, Total (mg/kg):</b>	41000	<0.3	<0.3	<0.3	<0.3
<b>Percent Solids (%)</b>	NS	82	82	70	78

NOTE: Sample 970806-LD-23-SL9021 is the duplicate of 970806-LD-23-SL0021 (20-22)

Explanation:

- J Positive results have been classified as qualitative during data validation.
- UJ Analyte was not detected at or above the indicated concentration and has been classified as qualitative.
- ND Not detected. Analytes in this group were all below their respective detection limits.

ug/kg Micrograms per kilogram.

mg/kg Milligrams per kilogram.

Concentration exceeds Industrial RBC

<sup>1/</sup> Source: USEPA Region III Risk Based Concentrations (RBC), October 22, 1997.

<sup>2/</sup> RBC for Arsenic as a carcinogen.

<sup>3/</sup> RBC for Chromium VI.

<sup>4/</sup> Residential RBC.



**TABLE 4-6**  
**Summary of Constituents Detected in Groundwater**  
**Samples Collected at SWMU 23 in August 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	USEPA MCL	970818-LD- 23-GW0021	970818-LD- 23-GW0022	970818-LD- 23-GW0023	970818-LD- 23-GW0024	970819-LD- 23-GW0025D	970819-LD-23 GW9025D	970819-LD- 23-GW0025S
LAB ID		86126-2	86126-1	86126-3	86126-4	86126-7	86126-12	86126-11
SAMPLE DATE		35660	35660	35660	35660	35661	35661	35661
<b><u>Volatile Organic Compounds(ug/L)</u></b>								
Acetone	3,700 <sup>11</sup>	<50	110	<50	<50	<50	<50	<50
<b><u>Semivolatile Organic Compounds(ug/L)</u></b>		ND	ND	ND	ND	ND	ND	ND
<b><u>Metals (mg/L):</u></b>								
Barium, Total	2	0.14	0.05	0.09	0.07	0.28	0.29	0.1
Chromium, Total	0.1	0.02	<0.01	0.01	0.01	0.03	0.03	<0.01
Copper, Total	1.3	<0.02	<0.02	<0.02	<0.02	0.02	0.02	0.02
Nickel, Total	0.1	0.02	<0.02	<0.02	0.02	0.04	0.04	<0.02
Zinc, Total	5	<0.02	0.05	0.11	0.09	0.09	0.11	0.06
<b>Cyanide, Total (mg/L):</b>	0.2	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

ND = Not Detected

<sup>11</sup> USEPA Region III Risk Based Concentration (RBC) for tap water, October 22, 1997

**TABLE 4-7**  
**Summary of Total Constituents Detected in Sludge**  
**Samples Collected at SWMU 24 in June 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	970619-LD-24-SM0001	970619-LD-24-SM9001	970619-LD-24-SM0002	970619-LD-24-SM0003	970619-LD-24-SM0004
LAB ID	84273-6	84273-10	84273-7	84273-8	84273-9
SAMPLE DATE	6/19/97	6/19/97	6/19/97	6/19/97	6/19/97
<b><u>Volatile Organic Compounds (ug/kg):</u></b>	ND	ND	ND	ND	ND
<b><u>Semivolatile Organic Compounds (ug/kg):</u></b>	ND	ND	ND	ND	ND
<b><u>Metals (mg/kg):</u></b>					
Antimony, Total	17	17	18	18	15
Arsenic, Total	18 J	17 J	15 J	15 J	15 J
Barium, Total	200	190	240	240	220
Beryllium, Total	2.4	2.6	2.4	3.1	2.6
Cadmium, Total	8.7	9	7.9	8.2	11
Chromium, Total	120	110	180	160	50
Copper, Total	110	110	85	87	130
Lead, Total	310	330	240	1703	530
Nickel, Total	36	36	43	42	33
Silver, Total	4.3	4.8	2.9	2.8	6.1
Zinc, Total	3100 J	3000 J	2900 J	2300 J	4500 J
<b>Cyanide, Total (mg/kg):</b>	3.8 J	3.1 J	3.2 J	2.4 J	4.7 J
<b>Percent Solids (%)</b>	83	84	85	86	82

J - Positive results have been classified as qualitative during data validation.

ND - Not detected. Analytes in this group were all below their respective detection limits.

ug/kg - Micrograms per kilogram.

mg/kg - Milligrams per kilogram.

NOTE: Sludge sample 970619-LD-24-SM9001 is the duplicate of 970619-LD-24-SM0001

**TABLE 4-8**  
**Summary of TCLP Constituents Detected in Sludge**  
**Samples Collected at SWMU 24 in June 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	RCRA TC Level	970619-LD- 24-SM0001	970619-LD- 24-SM9001	970619-LD- 24-SM0002	970619-LD- 24-SM0003	970619-LD- 24-SM0004
LAB ID		84273-6	84273-10	84273-7	84273-8	84273-9
SAMPLE DATE		6/19/97	6/19/97	6/19/97	6/19/97	6/19/97
<b><u>TCLP-Volatile Organic Compounds (mg/L):</u></b>		ND	ND	ND	ND	ND
<b><u>TCLP-Semivolatile Organic Compounds (mg/L):</u></b>		ND	ND	ND	ND	ND
<b><u>TCLP-Organochlorine Pesticides (mg/L):</u></b>		ND	ND	ND	ND	ND
<b><u>TCLP-Chlorinated Herbicides (mg/L):</u></b>		ND	ND	ND	ND	ND
<b><u>TCLP-Metals (mg/L):</u></b>						
Barium	100	1	0.9	0.8	0.6	1.2
Cadmium	1	0.03	0.03	0.01	<0.01	0.06

NOTE: Sludge sample 970619-LD-24-SM9001 is the duplicate of 970619-LD-24-SM0001.

ND - Not detected. Analytes in this group were all below their respective detection limits.

mg/L - Milligrams per liter.

**TABLE 4-9**  
**Summary of Constituents Detected in Surficial**  
**Soil Samples Collected at SWMU 24 in June 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	USEPA RBC	970618-LD-	970617-LD-	970617-LD-	970617-LD-	970617-LD-	970617-LD-	970617-LD-	970618-LD-
LAB ID	Soil Ingestion-	24-SL0002	24-SL0003	24-SL0004	24-SL0005	24-SL0006	24-SL9001	24-SL0007	24-SL0008
SAMPLE DATE	Industrial 1/	84221-12	84221-13	84221-14	84221-15	84221-16	84221-11	84221-19	84221-20
		6/18/97	6/17/97	6/17/97	6/17/97	6/17/97	6/17/97	6/17/97	6/18/97
<b><u>Volatile Organic Comounds (ug/kg):</u></b>									
Acetone	200,000,000	<70	<57	<68	<65	<60	<61	<93	<66
<b><u>Semivolatile Organic Compounds (ug/kg):</u></b>									
Acenaphthene	120,000,000	<460	<380	<450	<430	<400	<400	<610	<430
Acenaphthylene	NS	<460	580	<450	<430	<400	<400	780	<430
Anthracene	610,000,000	<460	410	<450	<430	<400	<400	<610	<430
Benzo(a)anthracene	7,800	<460	2050	<450	640	<400	<400	590	<430
Benzo(a)pyrene	780	<460	1400	<450	480	<400	<400	700	<430
Benzo(b)fluoranthene	7,800	<460	1500	<450	<430	<400	<400	980	<430
Benzo(g,h,i)perylene	NS	<460	1500	<450	<430	<400	<400	1600	<430
Benzo(k)fluoranthene	78,000	<460	980	<450	500	<400	<400	780	<430
Chrysene	780,000	<460	1400	<450	470	<400	<400	<610	<430
Dibenzo(a,h)anthracene	780	<460	<380	<450	<430	<400	<400	<610	<430
Fluoranthene	82,000,000	<460	2200	<450	690	<400	<400	<610	<430
Fluorene	82,000,000	<460	<380	<450	<430	<400	<400	<610	<430
Indeno(1,2,3-cd)pyrene	7,800	<460	1300	<450	<430	<400	<400	1500	<430
Naphthalene	82,000,000	<460	<380	<450	<430	<400	<400	<610	<430
Phenanthrene	NS	<460	1200	<450	<430	<400	<400	<610	<430
Pyrene	61,000,000	<460	1600	<450	460	<400	<400	<610	<430

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**TABLE 4-9**  
**Summary of Constituents Detected in Surficial**  
**Soil Samples Collected at SWMU 24 in June 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	USEPA RBC	970618-LD-	970617-LD-	970617-LD-	970617-LD-	970617-LD-	970617-LD-	970617-LD-	970618-LD-
LAB ID	Soil Ingestion-	24-SL0002	24-SL0003	24-SL0004	24-SL0005	24-SL0006	24-SL9001	24-SL0007	24-SL0008
SAMPLE DATE	Industrial 1/	84221-12	84221-13	84221-14	84221-15	84221-16	84221-11	84221-19	84221-20
		6/18/97	6/17/97	6/17/97	6/17/97	6/17/97	6/17/97	6/17/97	6/18/97
<b>Metals (mg/kg):</b>									
Antimony, Total	820	<7 UJ	<5.8 UJ	<6.7 UJ	13 J	<6 UJ	<6.1 UJ	<9.4 UJ	<6.6 UJ
Arsenic, Total	3.8 <sup>2/</sup>	5.5 J	9.1 J	9.9 J	12.8 J	8.1 J	7.5 J	21 J	9 J
Barium, Total	140,000	34	43	44	180	23	36	93	46
Beryllium, Total	1.3	<0.7	<0.58	<0.67	2.1	<0.6	<0.61	<0.94	<0.66
Cadmium, Total	1,000	<0.7	0.83	<0.67	10	<0.6	<0.61	2	1.2
Chromium, Total	10,000 <sup>3/</sup>	20	11	22	120	17	18	25	10
Copper, Total	1,000,000	14	13	19	92	10	4.4	29	21
Lead, Total	400 <sup>4/</sup>	<3.5	20	36	300	19	19	76	49
Mercury, Total	610	<0.35	<0.29	<0.34	<0.32	<0.3	<0.3	0.51	<0.33
Nickel, Total	41,000	6.3	5.9	8.3	39	4.6	5	24	12
Silver, Total	10,000	<1.4	<1.2	<1.3	2.9	<1.2	<1.2	<1.9	<1.3
Zinc, Total	610,000	25	84	240	2200	110	97	610	460
Cyanide, Total (mg/kg)	41,000	<0.3	1.3 J	2.2	4.1 J	0.9 J	0.7 J	2.8 J	0.8 J
Percent Solids (%)	NS	71	87	75	78	84	83	55	76

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**TABLE 4-9**  
**Summary of Constituents Detected in Surficial**  
**Soil Samples Collected at SWMU 24 in June 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	USEPA RBC	970618-LD-	970618-LD-	970618-LD-	970618-LD-	970618-LD-	970618-LD-	970618-LD-	970618-LD-
LAB ID	Soil Ingestion-	24-SL0009	24-SL0010	24-SL0011	24-SL0012	24-SL0013	24-SL0014	24-SL0015	24-SL0016
SAMPLE DATE	Industrial 1/	84221-21	84221-22	84221-23	84221-24	84221-25	84221-26	84221-27	84221-28
		6/18/97	6/18/97	6/18/97	6/18/97	6/18/97	6/18/97	6/18/97	6/18/97
<b><u>Volatile Organic Comounds (ug/kg):</u></b>									
Acetone	200,000,000	<68	<68	<63	150	<68	<75	<62	<68
<b><u>Semivolatile Organic Compounds (ug/kg):</u></b>									
Acenaphthene	120,000,000	<440	<450	<420	<410	<450	<4900	<410	460
Acenaphthylene	NS	<440	<450	568	<410	<450	9400	<410	1400
Anthracene	610,000,000	<440	<450	730	<410	<450	10000	<410	1000
Benzo(a)anthracene	7,800	<440	<450	3500	760	<450	63000	790	5900
Benzo(a)pyrene	780	<440	<450	2100	660	<450	36000	430	3400
Benzo(b)fluoranthene	7,800	<440	<450	2000	540	<450	33000	<410	3600
Benzo(g,h,i)perylene	NS	<440	<450	2000	720	<450	22000	<410	3900
Benzo(k)fluoranthene	78,000	<440	<450	1800	660	<450	16000	<410	1500
Chrysene	780,000	<440	<450	2100	560	<450	39000	530	3200
Dibenzo(a,h)anthracene	780	<440	<450	<420	<410	<450	<4900	<410	570
Fluoranthene	82,000,000	<440	<450	3200	860	<450	46000	1100	3500
Fluorene	82,000,000	<440	<450	490	<410	<450	<4900	<410	1200
Indeno(1,2,3-cd)pyrene	7,800	<440	<450	1800	650	<450	22000	<410	3600
Naphthalene	82,000,000	<440	<450	490	<410	<450	6300	<410	680
Phenanthrene	NS	<440	<450	1700	<410	<450	14000	500	2600
Pyrene	61,000,000	<440	<450	3100	590	<450	55000	790	5200

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**TABLE 4-9**  
**Summary of Constituents Detected in Surficial**  
**Soil Samples Collected at SWMU 24 in June 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	USEPA RBC	970618-LD-	970618-LD-	970618-LD-	970618-LD-	970618-LD-	970618-LD-	970618-LD-	970618-LD-
LAB ID	Soil Ingestion-	24-SL0009	24-SL0010	24-SL0011	24-SL0012	24-SL0013	24-SL0014	24-SL0015	24-SL0016
SAMPLE DATE	Industrial 1/	84221-21	84221-22	84221-23	84221-24	84221-25	84221-26	84221-27	84221-28
		6/18/97	6/18/97	6/18/97	6/18/97	6/18/97	6/18/97	6/18/97	6/18/97
<b>Metals (mg/kg):</b>									
Antimony, Total	820	<6.7 UJ	<6.8 UJ	<6.3 UJ	<6.2 UJ	<6.8 UJ	<7.5 UJ	<6.2 UJ	7.4 J
Arsenic, Total	3.8 <sup>2/</sup>	9.1 J	16.4 J	9.9 J	13.5 J	7.1 J	19 J	7.7 J	13.7 J
Barium, Total	140,000	28	100	160	99	81	140	65	190
Beryllium, Total	1.3	<0.67	<0.68	1.4	1.2	1.2	<0.7	<0.62	1.7
Cadmium, Total	1,000	<0.67	2.3	2	1.3	<0.68	4.2	<0.62	7.3
Chromium, Total	10,000 <sup>3/</sup>	8.1	162	25	15	11	22	12	47
Copper, Total	1,000,000	12	41	39	30	15	68	14	79
Lead, Total	400 <sup>4/</sup>	13	120	97	56	13	190	21	260
Mercury, Total	610	<0.36	0.35	<0.32	<0.31	<0.34	0.52	<0.31	0.63
Nickel, Total	41,000	15	23	17	45	18	26	12	30
Silver, Total	10,000	<1.3	1.6	<1.3	<1.2	<1.4	2	<1.2	3.2
Zinc, Total	610,000	120	780	740	470	68	1500	160	1900
<b>Cyanide, Total (mg/kg)</b>	41,000	0.8 J	1.7 J	0.7	1	1.2	4.3	5.6	2
Percent Solids (%)	NS	75	74	79	82	73	67	81	75

J = Positive results have been classified as qualitative during data validation.

UJ = Analyte was not detected at or above the indicated concentration and has been classified as qualitative.

<sup>1/</sup> Source: USEPA Region III Risk-Based Concentrations (RBC), October 22, 1997.

<sup>2/</sup> RBC for Arsenic as a carcinogen.

<sup>3/</sup> RBC for Chromium VI.

<sup>4/</sup> Residential RBC.

1.4 Concentration exceeds Industrial RBC.

**TABLE 4-10**  
**Summary of Total Constituents Detected in Sludge**  
**Samples Collected at SWMU 39 in June 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	970616-LD-39-SM0002	970616-LD-39-SM0003	970616-LD-39-SM9001	970619-LD-39-SM0005	970619-LD-39-SM0006
LAB ID	84221-5	84221-6	84221-3	84273-4	84273-5
SAMPLE DATE	6/16/97	6/16/97	6/16/97	6/19/97	6/19/97
<b><u>Volatile Organic Compounds (ug/kg):</u></b>	ND	ND	ND	ND	ND
<b><u>Semivolatile Organic Compounds (ug/kg):</u></b>					
Benzo(k)fluoranthene	<400	<380	<370	<410	630
<b><u>Metals (mg/kg):</u></b>					
Antimony, Total	12 J	13	12 J	15	11
Arsenic, Total	7.6 J	7 J	7.6 J	8.8 J	3.8 J
Barium, Total	260	230	220	200	85
Beryllium, Total	1.6	2.1	2.3	<0.6	<0.6
Cadmium, Total	11	8.3	12	6.5	5
Copper, Total	160	110	120	<2.5	7.2
Lead, Total	320	220	220	30	320
Nickel, Total	25	20	20	12	9.6
Silver, Total	4.6	3.4	3	<1.2	<1.3
Zinc, Total	3100	2900 J	2800	600 J	1400 J
<b><u>Cyanide, Total (mg/kg):</u></b>	3.2 J	4.7 J	4.8 J	8.3 J	<0.2 R
<b><u>Percent Solids (%)</u></b>	84	89	90	82	79

NOTE: Sample 970616-LD-39-SM9001 is the duplicate of 970616-LD-39-SM0003.

J - Positive results have been classified as qualitative during data validation.

R - Data classified as unusable.

ND - Not detected. Analytes in this group were all below their respective detection limits.

ug/kg - Micrograms per kilogram.

mg/kg - Milligrams per kilogram.



**TABLE 4-11**  
**Summary of TCLP Constituents Detected in Sludge**  
**Samples Collected at SWMU 39 in June 1997**  
**Land Disposal Areas**  
**Sloss Industries Corporation**

SAMPLE ID	RCRA TC Level	970616-LD- 39-SM0002	970616-LD- 39-SM0003	970616-LD- 39-SM9001	970619-LD- 39-SM0005	970619-LD- 39-SM0006
LAB ID		84221-5	84221-6	84221-3	84273-4	84273-5
SAMPLE DATE		6/16/97	6/16/97	6/16/97	6/19/97	6/19/97
<b><u>TCLP-Volatile Organic Compounds (mg/L):</u></b>		ND	ND	NA	ND	ND
<b><u>TCLP-Semivolatile Organic Compounds (mg/L):</u></b>		ND	ND	NA	ND	ND
<b><u>TCLP-Organochlorine Pesticides (mg/L):</u></b>		ND	ND	NA	ND	ND
<b><u>TCLP-Chlorinated Herbicides (mg/L):</u></b>		ND	ND	NA	ND	ND
<b><u>TCLP-Metals(mg/L):</u></b>						
Barium	100	2.8	0.91	NA	1.3	<0.3
Cadmium	1	0.036	<0.023	NA	<0.01	<0.01

ND - Not detected. Analytes in this group were all below their respective detection limits.

mg/L - Milligrams per liter.

NA - Not analyzed.

**TABLE 4-12**  
**Summary of Constituents Detected in Subsurface Soil Samples**  
**Collected at SWMUs 38 and 39 in August 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	USEPA RBC Soil Ingestion-	SWMU 38						
		970804-LD-38- SL0026(10-12)	970804-LD-38- SL9026	970804-LD-38- SL0026(18-20)	970805-LD-38- SL0027(11-13)	970805-LD-38- SL0027(22-24)	970808-LD-38- SL0027(22-24)	970807-LD-38- SL0028(8-10)
LAB ID	Industrial <sup>1/</sup>	85657-5	85657-8	85657-6	85657-13	85657-14	85785-18	85785-12
SAMPLE DATE		8/4/97	8/4/97	8/4/97	8/5/97	8/5/97	8/8/97	8/7/97
<b><u>Volatile Organic Compounds (ug/kg):</u></b>								
Toluene	410000000	<7	8	<6	<6	NA	<7	<7
<b><u>Semivolatile Organic Comounds (ug/kg):</u></b>		ND	ND	ND	ND	ND	NA	ND
<b><u>Metals (mg/kg):</u></b>								
Antimony, Total	820	<6.7	<6.7	<5.9	<6.1	<7.6	NA	9.6
Arsenic, Total	3.8 <sup>2/</sup>	3.3 J	3.5 J	1.8 J	4.1	2.3	NA	<1.3
Barium, Total	140,000	110	110	99	8.6	17	NA	19
Beryllium, Total	1.3	1.9	1.6	<0.6	<0.6	<0.8	NA	<0.6
Chromium, Total	10,000 <sup>3/</sup>	9.3	8.5	15	15	2.4	NA	15
Copper, Total	1,000,000	6.5	15	6.5	<2.4	<3	NA	6.1
Lead, Total	400 <sup>4/</sup>	6.4	5.5	<3	<3	<3.8	NA	7.9
Nickel, Total	41,000	32	29	20	<2.4	4.4	NA	<2.7
Silver, Total	10,000	<1.3 UJ	<1.3 UJ	<1.2 UJ	<1.2 UJ	<1.5 UJ	NA	<1.3 UJ
Zinc, Total	610,000	76	51	60	23	18	NA	31
<b>Cyanide, Total (mg/kg):</b>	41,000	<0.3	<0.3	<0.2	<0.2	<0.3	NA	<0.3
<b>Percent Solids (%)</b>	NS	76	76	87	83	66	72	75

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**TABLE 4-12**  
**Summary of Constituents Detected in Subsurface Soil Samples**  
**Collected at SWMUs 38 and 39 in August 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	USEPA RBC Soil Ingestion- Industrial <sup>1/</sup>	SWMU 38						
		970807-LD-38- SL0028(13-15)	970807-LD-38- SL0029(15-17)	970807-LD-38- SL0029(19-21)	970807-LD-38- SL0030(9-11)	970807-LD-38- SL0030(17-19)	970808-LD-38- SL0037(4-6)	970808-LD-38- SL0037(8-10)
LAB ID		85785-14	85785-10	85785-11	85785-8	85785-9	85785-21	85785-20
SAMPLE DATE		8/7/97	8/7/97	8/7/97	8/7/97	8/7/97	8/8/97	8/8/97
<b><u>Volatile Organic Compounds (ug/kg):</u></b>								
Toluene	410000000	<7	<7	<7	<6	<7	<7	<7
<b><u>Semivolatile Organic Comounds (ug/kg):</u></b>		ND	ND	ND	ND	ND	ND	ND
<b><u>Metals (mg/kg):</u></b>								
Antimony, Total	820	<6.8	<6.7	<6.7	<5.9	<6.7	<6.7	<6.7
Arsenic, Total	3.8 <sup>2/</sup>	1.8	<1.3	2.1	4.3 J	5.1 J	2	3.5
Barium, Total	140,000	120	70	130	61	130	2.4	94
Beryllium, Total	1.3	<0.7	<0.7	2.8	<0.6 UJ	<0.8 UJ	<0.7	<0.7
Chromium, Total	10,000 <sup>3/</sup>	10	6	3.1	9.4	11	19	5.7
Copper, Total	1,000,000	<2.7	5.2	5.5	<2.3 UJ	110 J	<2.7	<2.7
Lead, Total	400 <sup>4/</sup>	36	5	<3.4	<2.9	<3.3	9.4	11
Nickel, Total	41,000	23	5.4	24	<2.3	<2.7	<2.7	3
Silver, Total	10,000	<1.4 UJ	<1.3 UJ	<1.3 UJ	<1.2	7.6	<1.3 UJ	<1.3 UJ
Zinc, Total	610,000	62	47	79	54	190	10	63
Cyanide, Total (mg/kg):	41,000	<0.3	<0.3	<0.3	<0.2	<0.3	<0.3	<0.3
Percent Solids (%)	NS	74	75	75	86	75	75	75

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**TABLE 4-12**  
**Summary of Constituents Detected in Subsurface Soil Samples**  
**Collected at SWMUs 38 and 39 in August 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	USEPA RBC Soil Ingestion-	SWMU 39						
		970808-LD-39- SL0033(11-13)	970805-LD-39- SL0034(10-12)	970808-LD-39- SL0034(10-12)	970808-LD-39- SL0035(10-12)	970804-LD-39- SL0036(5-7)	970804-LD-39- SL9036	970804-LD-39- SL0036(10-12)
LAB ID	Industrial <sup>1/</sup>	85785-23	85657-15	85785-19	85785-22	85657-2	85657-7	85657-4
SAMPLE DATE		8/8/97	8/5/97	8/8/97	8/8/97	8/4/97	8/4/97	8/4/97
<b><u>Volatile Organic Compounds (ug/kg):</u></b>								
Toluene	410000000	<6	NA	<6	<7	<6	<6	<7
<b><u>Semivolatile Organic Comounds (ug/kg):</u></b>		ND	ND	ND	ND	ND	ND	ND
<b><u>Metals (mg/kg):</u></b>								
Antimony, Total	820	<6.2	<6	NA	<7.5	<6	<6.1	<7.3
Arsenic, Total	3.8 <sup>2/</sup>	5	5.2	NA	2.7	4.2	3.5 J	4.8
Barium, Total	140,000	420	180	NA	130	140	140	110
Beryllium, Total	1.3	<0.6	<0.6	NA	<0.7	<0.6	<0.6	<0.7
Chromium, Total	10,000 <sup>3/</sup>	10	13	NA	11	8.9	7.9	11
Copper, Total	1,000,000	4.3	<2.4	NA	<3	16	21	9.3
Lead, Total	400 <sup>4/</sup>	9.3	10	NA	7.9	28	16	6
Nickel, Total	41,000	22	6	NA	9.3	7.1	7.2	11
Silver, Total	10,000	<1.2 UJ	<1.2 UJ	NA	<1.5 UJ	<2.1 UJ	<1.2 UJ	<1.5 UJ
Zinc, Total	610,000	53	46	NA	57	58	57	96
<b>Cyanide, Total (mg/kg):</b>	41,000	1.25	0.7	NA	<0.3	<0.2	<0.2	<0.3
<b>Percent Solids (%)</b>	NS	82	83	84	67	84	83	69

NA

Not Analyzed

NS

No Standard

ND

Not detected. Analytes in this group were all below their respective detection limits.

J

Positive results have been classified as qualitative during data validation.

U

Classified as nondetected.

ug/kg

Micrograms per kilogram.

mg/kg

Milligrams per kilogram.

<sup>1/</sup> Source: USEPA Region III Risk Based Concentrations (RBC), October 22, 1997<sup>2/</sup> RBC for Arsenic as a carcinogen.<sup>3/</sup> RBC for chromium VI<sup>4/</sup> Residential RBC

Concentration exceeds Industrial RBC.

Note: Sample 970804-LD-38-SL9025 is the duplicate of 970804-LD-38-SL0025(10-12);

Sample 970804-LD-39-SL9036 is the duplicate of 970804-LD-39-SL0036(5-7).

**TABLE 4-13**  
**Summary of Constituents Detected in Groundwater Samples**  
**Collected at SWMUs 38 and 39 in August 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	USEPA MCL	SWMU 38						
		970821-LD-38-GW0026	970819-LD-38-GW0027	970819-LD-38-GW0028	970819-LD-38-GW0029	970821-LD-38-GW0030D	970821-LD-38-GW0030S	970821-LD-38-GW0037
LAB ID		86173-19	86173-2	86126-14	86126-13	86173-17	86173-15	86173-11
SAMPLE DATE		8/21/97	8/19/97	8/19/97	8/19/97	8/21/97	8/21/97	8/21/97
<b><u>Volatile Organic Compounds (ug/L):</u></b>								
Acetone	3700 <sup>11</sup>	120	<50	<50	<50	120	1000	<50
Benzene	5	13	<5	<5	<5	<5	<5	<5
Toluene	1000	7	<2	<2	<2	<2	<2	<2
Trichloroethene	5	<2	<2	<2	3	<2	<2	<2
Xylenes	10000	23	<5	<5	<5	<5	<5	<5
<b><u>Semivolatile Organic Compounds (mg/L):</u></b>		ND	ND	ND	ND	ND	ND	ND
<b><u>Metals (mg/L):</u></b>								
Barium, Total	2	0.26	0.08	0.14	0.51	0.5	0.13	0.07
Chromium, Total	0.1	0.02	<0.01	<0.01	<0.01	<0.01	0.01	<0.01
Copper, Total	1.3	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02
Zinc, Total	5	0.2	<0.02	<0.02	0.06	<0.02	0.18	0.05
Lead, Total	0.015	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Silver, Total	0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
<b>Cyanide, Total (mg/L)</b>	0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

**TABLE 4-13**  
**Summary of Constituents Detected in Groundwater Samples**  
**Collected at SWMUs 38 and 39 in August 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	USEPA MCL	SWMU 39							
		970821-LD-39-GW0031	970821-LD-39-GW0032	970820-LD-39-GW0033	970821-LD-39-GW0034D	970820-LD-39-GW0034S	970820-LD-39-GW9034S	970821-LD-39-GW0035	970821-LD-39-GW0036
LAB ID		86173-13	86173-14	86173-8	86173-18	86173-6	86173-7	86173-12	86173-9
SAMPLE DATE		8/21/97	8/21/97	8/20/97	8/21/97	8/20/97	8/20/97	8/21/97	8/21/97
<b><u>Volatile Organic Compounds (ug/L):</u></b>									
Acetone	3700 <sup>1/</sup>	120	<50	<50	66	<50	<50	<50	<50
Benzene	5	<5	<5	<5	6	<5	<5	<5	<5
Toluene	1000	<2	<2	<2	<2	<2	<2	<2	<2
Trichloroethene	5	<2	<2	<2	<2	<2	<2	<2	<2
Xylenes	10000	<5	<5	<5	7	<5	<5	<5	<5
<b><u>Semivolatile Organic Compounds (mg/L):</u></b>		ND	ND	ND	ND	ND	ND	ND	ND
<b><u>Metals (mg/L):</u></b>									
Barium, Total	2	0.12	0.03	0.1	0.03	0.02	0.02	0.07	0.02
Chromium, Total	0.1	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01
Copper, Total	1.3	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02
Zinc, Total	5	<0.02	<0.02	<0.02	0.21	<0.02	<0.02	<0.02	0.05
Lead, Total	0.015	<0.025	<0.025	<0.025	0.04	<0.025	<0.025	<0.025	<0.025
Silver, Total	0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.24
<b>Cyanide, Total (mg/L)</b>	<b>0.2</b>	0.03	0.38	0.14	<0.02	0.21	0.22	0.07	<0.02

ND Not detected. Analytes in this group were all below their respective detection limits.

mg/L Milligrams per liter.

ug/L Micrograms per liter.

<sup>1/</sup> Source: USEPA Region III Risk Based Concentrations (RBC) for tap water, October 22, 1997

Concentration exceeds USEPA MCL.

**TABLE 5-1**  
**Occurrence Summary for Subsurface Soil Samples from SWMU 23**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	Frequency Detects / Total	Range of SQLs Min – Max	Range of Detects Min – Max	Average Detect	Mean	UCL	EPC
<u>VOCs (µg/kg)</u>							
Acetone	1 / 8	57 - 75	110 - 110	110	42	61	61
<u>Metals/Inorganics (mg/kg)</u>							
Arsenic	8 / 8	NA	2.2 - 30	8.3	8.2	22	22
Barium	8 / 8	NA	14 - 180	64	67	160	160
Beryllium	1 / 8	0.60 - 0.70	0.7	0.70	0.36	0.45	0.45
Cadmium	2 / 8	0.60 - 0.70	2.4 - 2.5	2.5	0.83	2.7	2.5
Chromium	5 / 8	1.2 - 1.4	7.0 - 19	13	14	280	19
Copper	2 / 8	2.3 - 3.0	5.0 - 22	14	3.8	16	16
Cyanide	3 / 8	0.20 - 0.30	0.31 - 0.43	0.36	0.23	0.36	0.36
Lead	4 / 8	3.0 - 3.7	4.4 - 19	12	7.2	29	19
Nickel	5 / 8	2.3 - 2.9	8.8 - 66	33	35	1,000	66
Zinc	8 / 8	NA	32 - 430	100	93	230	230

EPC	Exposure point concentration; lesser of the UCL and the maximum detected concentration.
Mean	Arithmetic average of the total number of samples, using proxy concentrations for non-detects.
µg/kg	Micrograms per kilogram.
mg/kg	Milligrams per kilogram.
NA	Not available.
SQLs	Practical sample quantitation limits for the non-detects.
UCL	95 percent upper confidence limit (one-tailed) on the mean, assuming a log-normal distribution.
VOCs	Volatile organic compounds.

**TABLE 5-2**  
**Occurrence Summary for Sludge Samples from SWMU 23**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	Frequency Detects / Total	Range of SQLs Min - Max	Range of Detects Min - Max	Average Detect	Mean	UCL	EPC
<u>VOCs (µg/kg)</u>							
2-Butanone (MEK)	2 / 4	1,060 - 1,060 *	250 - 530	390	470	920	530
Acetone	2 / 4	1,500 - 2,300	670 - 1,200	940	950	1,500	1,200
Ethylbenzene	1 / 4	24 - 230	220 - 220	220	130	510,000	220
Toluene	3 / 4	28 - 28	200 - 5,100	1,900	5,800	3.5E+13	5,100
Xylenes	3 / 4	24 - 24	96 - 900	550	1,200	4.E+09	900
<u>SVOCs (µg/kg)</u>							
4-Methylphenol	3 / 4	3,000	2,800 - 10,000	5,300	4,600	54,000	10,000
Acenaphthylene	4 / 4	NA	2,700 - 11,000	6,500	6,900	35,000	11,000
Anthracene	1 / 4	1,600 - 1,900	3,800 - 3,800	3,800	1,700	14,000	3,800
Benzo(a)anthracene	4 / 4	NA	5,300 - 45,000	23,000	27,000	700,000	45,000
Benzo(b)fluoranthene	4 / 4	NA	3,800 - 57,000	25,000	33,000	7,100,000	57,000
Benzo(g,h,i)perylene	4 / 4	NA	5,000 - 40,000	19,000	22,000	750,000	40,000
Benzo(k)fluoranthene	4 / 4	NA	5,300 - 27,000	15,000	16,000	250,000	27,000
Benzo(a)pyrene	4 / 4	NA	6,500 - 47,000	24,000	27,000	620,000	47,000
Chrysene	4 / 4	NA	3,700 - 39,000	17,000	20,000	810,000	39,000
Dibenzo(a,h)anthracene	1 / 4	1,600 - 1,900	3,200 - 3,200	3,200	1,500	8,100	3,200
Fluoranthene	4 / 4	NA	5,700 - 25,000	16,000	18,000	130,000	25,000
Fluorene	1 / 4	1,600 - 1,900	5,400 - 5,400	5,400	2,100	51,000	5,400
Indeno(1,2,3-cd)pyrene	4 / 4	NA	5,500 - 39,000	18,000	21,000	440,000	39,000
Naphthalene	1 / 4	1,600 - 3,000	4,100 - 4,100	4,100	1,900	17,000	4,100
Phenanthrene	3 / 4	1,600	3,500 - 14,000	7,300	7,200	1,400,000	14,000
Pyrene	4 / 4	NA	3,600 - 31,000	17,000	20,000	540,000	31,000
<u>Metals/Inorganics (mg/kg)</u>							
Arsenic	3 / 4	6.0	11 - 42	22	20	1,700	42
Barium	4 / 4	NA	160 - 450	310	320	830	450

Footnotes on page 2.



**TABLE 5-2**  
**Occurrence Summary for Sludge Samples from SWMU 23**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	Frequency Detects / Total	Range of SQLs Min – Max	Range of Detects Min – Max	Average Detect	Mean	UCL	EPC
<b>Metals/Inorganics (mg/kg)</b>							
Chromium	4 / 4	NA	65 - 190	130	130	320	190
Copper	4 / 4	NA	32 - 240	120	130	1,900	240
Cyanide	3 / 4	1.8	4.0 - 136	53	100	4.4E+09	140
Lead	4 / 4	NA	18 - 51	39	40	110	51
Mercury	4 / 4	NA	1.9 - 8.6	6.4	7.1	52	8.6
Nickel	4 / 4	NA	68 - 270	170	180	750	270
Selenium	4 / 4	NA	50 - 150	95	98	300	150
Silver	2 / 4	5.6 - 6.0	5.7 - 8.0	6.9	5.0	15	8.0
Zinc	4 / 4	NA	140 - 300	240	240	430	300

- \* When SQL/2 exceeds the maximum detect (i.e., an unusually high SQL), the maximum detect is used as the proxy concentration.
- EPC Exposure point concentration; lesser of the UCL and the maximum detected concentration.
- Mean Arithmetic average of the total number of samples, using proxy concentrations for non-detects.
- µg/kg Micrograms per kilogram.
- mg/kg Milligrams per kilogram.
- NA Not available.
- SQLs Practical sample quantitation limits for the non-detects.
- SVOCs Semivolatile organic compounds.
- UCL 95 percent upper confidence limit (one-tailed) on the mean, assuming a log-normal distribution.
- VOCs Volatile organic compounds.

**TABLE 5-3**  
**Occurrence Summary for Surficial Soil Samples from SWMU 24**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	Frequency Detects / Total	Range of SQLs Min - Max	Range of Detects Min - Max	Average Detect	Mean	UCL	EPC
<u>VOCs (µg/kg)</u>							
Acetone	1 / 15	57 - 93	150	150	40	50	50
<u>SVOCs (µg/kg)</u>							
Acenaphthene	1 / 15	380 - 920	* 460	460	250	290	290
Acenaphthylene	5 / 15	400 - 460	568 - 9,400	2,500	690	1,600	1,600
Anthracene	4 / 15	400 - 610	410 - 10,000	3,000	620	1,400	1,400
Benzo(a)anthracene	8 / 15	400 - 460	590 - 63,000	9,700	2,900	16,000	16,000
Benzo(b)fluoranthene	6 / 15	400 - 460	540 - 33,000	6,900	1,700	7,200	7,200
Benzo(g,h,i)perylene	6 / 15	400 - 460	720 - 22,000	5,300	1,700	6,400	6,400
Benzo(k)fluoranthene	7 / 15	400 - 460	500 - 16,000	3,200	1,100	3,100	3,100
Benzo(a)pyrene	8 / 15	400 - 460	430 - 36,000	5,600	1,800	6,900	6,900
Chrysene	7 / 15	400 - 610	470 - 39,000	6,800	1,700	7,000	7,000
Dibenzo(a,h)anthracene	1 / 15	380 - 1,040	* 570	570	260	310	310
Fluoranthene	7 / 15	400 - 610	690 - 46,000	8,200	2,400	11,000	11,000
Fluorene	2 / 15	380 - 2,400	* 490 - 1,200	850	350	510	510
Indeno(1,2,3-cd)pyrene	6 / 15	400 - 460	650 - 22,000	5,100	1,500	5,700	5,700
Naphthalene	3 / 15	380 - 610	490 - 6,300	2,500	470	880	880
Phenanthrene	5 / 15	400 - 610	500 - 14,000	4,000	1,100	3,100	3,100
Pyrene	7 / 15	400 - 610	460 - 55,000	9,500	2,400	13,000	13,000
<u>Metals/Inorganics (mg/kg)</u>							
Antimony	2 / 15	5.8 - 9.4	7.4 - 13	10	4.2	5.2	5.2
Arsenic	15 / 15	NA	5.5 - 21	11	11	14	14
Barium	15 / 15	NA	28 - 190	89	91	130	130
Beryllium	5 / 15	0.58 - 0.94	1.2 - 2.1	1.5	0.73	1.2	1.2
Cadmium	9 / 15	0.60 - 0.70	0.83 - 10	3.5	2.3	6.2	6.2
Chromium	15 / 15	NA	8.1 - 162	35	33	59	59
Copper	15 / 15	NA	10 - 92	33	33	52	52

Footnotes on page 2.

**TABLE 5-3**  
**Occurrence Summary for Surficial Soil Samples from SWMU 24**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	Frequency Detects / Total	Range of SQLs Min - Max	Range of Detects Min - Max	Average Detect	Mean	UCL	EPC
<b><u>Metals/Inorganics (mg/kg)</u></b>							
Cyanide	14 / 15	0.30	0.70 - 5.6	2.1	2.2	4.1	4.1
Lead	14 / 15	3.5	13 - 300	91	110	380	300
Mercury	4 / 15	0.29 - 0.36	0.35 - 0.63	0.50	0.25	0.34	0.34
Nickel	15 / 15	NA	5.0 - 45	19	20	30	30
Silver	4 / 15	1.2 - 1.9	1.6 - 3.2	2.4	1.1	1.6	1.6
Zinc	15 / 15	NA	25 - 2,200	630	770	2,500	2,200

\* When SQL/2 exceeds the maximum detect (i.e., an unusually high SQL), the maximum detect is used as the proxy concentration.

EPC Exposure point concentration; lesser of the UCL and the maximum detected concentration.

Mean Arithmetic average of the total number of samples, using proxy concentrations for non-detects.

µg/kg Micrograms per kilogram.

mg/kg Milligrams per kilogram.

NA Not available.

SQLs Practical sample quantitation limits for the non-detects.

SVOCs Semivolatile organic compounds.

UCL 95 percent upper confidence limit (one-tailed) on the mean, assuming a log-normal distribution.

VOCs Volatile organic compounds.

**TABLE 5-4**  
**Occurrence Summary for Sludge Samples for SWMU 24**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	Frequency Detects / Total	Range of SQLs Min – Max	Range of Detects Min – Max	Average Detect	Mean	UCL	EPC
<u>Metals/Inorganics</u>							
Antimony	4 / 4	NA	15 - 18	17	17	19	18
Arsenic	4 / 4	NA	15 - 18	16	16	18	18
Barium	4 / 4	NA	200 - 240	230	230	250	240
Beryllium	4 / 4	NA	2.4 - 3.1	2.7	2.7	3.1	3.1
Cadmium	4 / 4	NA	7.9 - 11	9.0	9.0	11	11
Chromium	4 / 4	NA	50 - 180	130	140	530	180
Copper	4 / 4	NA	85 - 130	100	100	140	130
Cyanide	4 / 4	NA	2.4 - 4.7	3.5	3.6	5.6	4.7
Lead	4 / 4	NA	240 - 1,703	700	750	13,000	1,700
Nickel	4 / 4	NA	33 - 43	39	39	46	43
Silver	4 / 4	NA	2.8 - 6.1	4.2	4.2	8.4	6.1
Zinc	4 / 4	NA	2,300 - 4,500	3,200	3,200	5,000	4,500

All concentrations are reported in milligrams per kilogram (mg/kg).

EPC Exposure point concentration; lesser of the UCL and the maximum detected concentration.  
Mean Arithmetic average of the total number of samples, using proxy concentrations for non-detects.  
NA Not available.  
SQLs Practical sample quantitation limits for the non-detects.  
UCL 95 percent upper confidence limit (one-tailed) on the mean, assuming a log-normal distribution.

**TABLE 5-5**  
**Occurrence Summary for Subsurface Soil Samples from SWMUs 38 and 39**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	Frequency Detects / Total	Range of SQLs Min – Max	Range of Detects Min – Max	Average Detect	Mean	UCL	EPC
<u>VOCs (µg/kg)</u>							
Toluene	1 / 17	6.0 - 7.0	8.0	8.0	3.6	4.0	4.0
<u>Metals/Inorganics (mg/kg)</u>							
Antimony	1 / 17	5.9 - 7.6	9.6	9.6	3.6	4.1	4.1
Arsenic	15 / 17	1.3 - 1.3	1.8 - 5.2	3.5	3.3	4.8	4.8
Barium	17 / 17	NA	2.4 - 420	110	150	400	400
Beryllium	2 / 17	0.60 - 0.80	1.9 - 2.8	2.4	0.52	0.74	0.74
Chromium	17 / 17	NA	2.4 - 19	10	11	14	14
Copper	9 / 17	2.3 - 3.0	4.3 - 110	20	9.1	25	25
Cyanide	2 / 19	0.20 - 0.30	0.70 - 1.25	0.98	0.20	0.28	0.28
Lead	11 / 17	2.9 - 3.8	5.0 - 36	12	9.0	18	18
Nickel	12 / 17	2.3 - 2.7	3.0 - 32	14	12	29	29
Silver	1 / 17	1.2 - 1.5	7.6 - 7.6	7.6	0.90	1.2	1.2
Zinc	17 / 17	NA	10 - 190	60	62	91	91

EPC Exposure point concentration; lesser of the UCL and the maximum detected concentration.  
Mean Arithmetic average of the total number of samples, using proxy concentrations for non-detects.  
µg/kg Micrograms per kilogram.  
mg/kg Milligrams per kilogram.  
NA Not available.  
SQLs Practical sample quantitation limits for the non-detects.  
UCL 95 percent upper confidence limit (one-tailed) on the mean, assuming a log-normal distribution.  
VOCs Volatile organic compounds.

**TABLE 5-6**  
**Occurrence Summary for Sludge Samples from SWMU 39**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	Frequency Detects / Total	Range of SQLs Min – Max	Range of Detects Min – Max	Average Detect	Mean	UCL	EPC
<u>PAHs (µg/kg)</u>							
Benzo(k)fluoranthene	1 / 4	370 - 410	630	630	310	1,300	630
<u>Metals/Inorganics (mg/kg)</u>							
Antimony	4 / 4	NA	11 - 15	13	13	15	15
Arsenic	4 / 4	NA	3.8 - 8.8	7.0	7.1	14	8.8
Barium	4 / 4	NA	85 - 260	190	200	600	260
Beryllium	2 / 4	0.60	1.6 - 2.3	2.0	1.4	120	2.3
Cadmium	4 / 4	NA	5.0 - 12	8.6	8.8	20	12
Copper	3 / 4	2.5	7.2 - 160	96	310	2.4E+11	160
Cyanide	3 / 4	0.20	3.2 - 8.3	5.4	14	5.1E+07	8.3
Lead	4 / 4	NA	30 - 320	220	310	43,000	320
Nickel	4 / 4	NA	9.6 - 25	17	17	41	25
Silver	2 / 4	1.2 - 1.3	3.4 - 4.6	4.0	2.8	230	4.6
Zinc	4 / 4	NA	600 - 3,100	2,000	2,200	22,000	3,100

EPC	Exposure point concentration; lesser of the UCL and the maximum detected concentration.
Mean	Arithmetic average of the total number of samples, using proxy concentrations for non-detects.
µg/kg	Micrograms per kilogram.
mg/kg	Milligrams per kilogram.
NA	Not available.
PAHs	Polycyclic aromatic hydrocarbons.
SQLs	Practical sample quantitation limits for the non-detects.
UCL	95 percent upper confidence limit (one-tailed) on the mean, assuming a log-normal distribution.

**TABLE 5-7**  
**Occurrence Summary for Groundwater Samples from SWMU 23**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	Frequency Detects / Total	Range of SQLs Min – Max	Range of Detects Min – Max	Average Detect	Mean	UCL	EPC
<u>VOCs (µg/kg)</u>							
Acetone	1 / 6	50 - 50	110	110	38	84	84
<u>Metals/Inorganics (mg/kg)</u>							
Barium	6 / 6	NA	0.050 - 0.29	0.12	0.13	0.28	0.28
Chromium	4 / 6	0.010 - 0.010	0.010 - 0.030	0.018	0.014	0.040	0.030
Copper	2 / 6	0.020 - 0.020	0.020 - 0.020	0.020	0.013	0.020	0.020
Cyanide	1 / 6	0.020 - 0.020	0.050	0.050	0.016	0.040	0.040
Nickel	3 / 6	0.020 - 0.020	0.020 - 0.040	0.027	0.019	0.038	0.038
Zinc	5 / 6	0.020 - 0.020	0.050 - 0.11	0.084	0.085	0.40	0.11

EPC Exposure point concentration; lesser of the UCL and the maximum detected concentration.  
Mean Arithmetic average of the total number of samples, using proxy concentrations for non-detects.  
µg/kg Micrograms per kilogram.  
mg/kg Milligrams per kilogram.  
NA Not available.  
SQLs Practical sample quantitation limits for the non-detects.  
UCL 95 percent upper confidence limit (one-tailed) on the mean, assuming a log-normal distribution.  
VOCs Volatile organic compounds.

**TABLE 5-8**  
**Occurrence Summary for Groundwater Samples from SWMUs 38 and 39**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	Frequency Detects / Total	Range of SQLs Min - Max	Range of Detects Min - Max	Average Detect	Mean	UCL	EPC
<u>VOCs (µg/kg)</u>							
Acetone	5 / 14	50 - 50	66 - 1,000	290	89	220	220
Benzene	2 / 14	5.0 - 5.0	6.0 - 13	9.5	3.4	4.4	4.4
Toluene	1 / 14	2.0 - 2.0	7.0	7.0	1.3	1.8	1.8
Trichloroethene	1 / 14	2.0 - 5.0	3.0	3.0	1.2	1.5	1.5
Xylenes	2 / 14	5.0 - 5.0	23	15	3.9	5.7	5.7
<u>Metals/Inorganics (mg/kg)</u>							
Barium	14 / 14	NA	0.020 - 0.51	0.15	0.16	0.37	0.37
Chromium	3 / 14	0.010 - 0.010	0.010 - 0.020	0.013	0.0067	0.0084	0.0084
Copper	2 / 14	0.020 - 0.020	0.020 - 0.030	0.025	0.012	0.014	0.014
Cyanide	5 / 14	0.020 - 0.020	0.030 - 0.38	0.17	0.060	0.22	0.22
Lead	1 / 14	0.025 - 0.025	0.040	0.040	0.014	0.017	0.017
Silver	1 / 14	0.010 - 0.010	0.24	0.24	0.011	0.026	0.026
Zinc	6 / 14	0.020 - 0.020	0.050 - 0.21	0.13	0.061	0.19	0.19

EPC Exposure point concentration; lesser of the UCL and the maximum detected concentration.  
Mean Arithmetic average of the total number of samples, using proxy concentrations for non-detects.  
µg/kg Micrograms per kilogram.  
mg/kg Milligrams per kilogram.  
NA Not available.  
SQLs Practical sample quantitation limits for the non-detects.  
UCL 95 percent upper confidence limit (one-tailed) on the mean, assuming a log-normal distribution.  
VOCs Volatile organic compounds.



**TABLE 5-9**  
**Selection of Constituents of Concern in Subsurface Soil for SWMU 23**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituents	Maximum Concentration	Background Concentration	Industrial Risk-Based Screening Value	COC Basis
<u>VOCs</u> (µg/kg)				
Acetone	110	NAP	20,000,000	no/B
<u>Inorganics</u> (mg/kg)				
Arsenic	30	11	3.8	YES/A
Barium	180	52	14,000	no/B
Beryllium	0.70	0.58	1.3	no/B
Cadmium	2.5	NAP	100	no/B
Chromium	19	30	1,000	no/B
Copper	22	8.3	100,000	no/B
Cyanide	0.43	NAP	4,100	no/B
Lead	19	12	400	no/B
Nickel	66	8.1	4,100	no/B
Zinc	430	31	61,000	no/B

A Greater than risk-based concentration ( $10^{-6}$  for carcinogens and HQ=0.1 for non-carcinogens).

B Less than risk-based concentration ( $10^{-6}$  for carcinogens and HQ=0.1 for non-carcinogens).

COC Constituent of concern.

µg/kg Micrograms per kilogram.

mg/kg Milligrams per kilogram.

NAP Not applicable.

VOCs Volatile organic compounds.

**TABLE 5-10**  
**Selection of Constituents of Concern in Sludge for SWMU 23**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituents	Maximum Concentration	Background Concentration	Residential Risk-Based Screening Value	COC Basis
<u>Carcinogenic PAHs (µg/kg)</u>				
Benzo(a)anthracene	45,000	NAP	880	YES/A, C
Benzo(b)fluoranthene	57,000	NAP	880	YES/A, C
Benzo(k)fluoranthene	27,000	NAP	8,800	YES/A, C
Benzo(a)pyrene	47,000	NAP	88	YES/A, C
Chrysene	39,000	NAP	88,000	YES/C
Dibenzo(a,h)anthracene	3,200	NAP	88	YES/A, C
Indeno(1,2,3-cd)pyrene	39,000	NAP	880	YES/A, C
<u>Non-Carcinogenic PAHs (µg/kg)</u>				
Acenaphthylene*	11,000	NAP	230,000	no/B
Anthracene	3,800	NAP	2,300,000	no/B
Benzo(g,h,i)perylene*	40,000	NAP	230,000	no/B
Fluoranthene	25,000	NAP	310,000	no/B
Fluorene	5,400	NAP	310,000	no/B
Naphthalene	4,100	NAP	310,000	no/B
Phenanthrene*	14,000	NAP	230,000	no/B
Pyrene	31,000	NAP	230,000	no/B
<u>VOCs (µg/kg)</u>				
2-Butanone (MEK)	530	NAP	4,700,000	no/B
Acetone	1,200	NAP	780,000	no/B
Ethylbenzene	220	NAP	780,000	no/B
Toluene	5,100	NAP	1,600,000	no/B
Xylenes	900	NAP	16,000,000	no/B
<u>SVOCs (µg/kg)</u>				
4-Methylphenol	10,000	NAP	39,000	no/B
<u>Inorganics (mg/kg)</u>				
Arsenic	42	11	0.43	YES/A
Barium	450	52	550	no/B
Chromium	190	30	39	YES/A
Copper	240	8.3	27,000	no/B
Cyanide	136	NAP	160	no/B
Lead	51	12	400	no/B
Mercury	8.6	0.034	2.3	YES/A
Nickel	270	8.1	160	YES/A
Selenium	150	NAP	39	YES/A
Silver	8.0	NAP	39	no/B
Zinc	300	31	2,300	no/B

Footnotes appear on page 2.

**TABLE 5-10**  
**Selection of Constituents of Concern in Sludge for SWMU 23**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

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Concentrations are reported in milligrams per kilogram (mg/kg).

*	Pyrene used as a surrogate.
A	Greater than risk-based concentration ( $10^{-6}$ for carcinogens and HQ=0.1 for non-carcinogens).
B	Less than risk-based concentration ( $10^{-6}$ for carcinogens and HQ=0.1 for non-carcinogens).
C	The chemical is a member of a chemical class which contains other COCs.
COC	Constituent of concern.
µg/kg	Micrograms per kilogram.
mg/kg	Milligrams per kilogram.
NAP	Not applicable.
PAHs	Polycyclic aromatic hydrocarbons.
SVOCs	Semivolatile organic compounds.
VOCs	Volatile organic compounds.

**TABLE 5-11**  
**Selection of Constituents of Concern in Surficial Soils for SWMU 24**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituents	Maximum Concentration	Background Concentration	Residential Risk-Based Screening Value	COC Basis
<u>Carcinogenic PAHs (µg/kg)</u>				
Benzo(a)anthracene	63,000	NAP	880	YES/A, C
Benzo(b)fluoranthene	33,000	NAP	880	YES/A, C
Benzo(k)fluoranthene	16,000	NAP	8,800	YES/A, C
Benzo(a)pyrene	36,000	NAP	88	YES/A, C
Chrysene	39,000	NAP	88,000	YES/C
Dibenzo(a,h)anthracene	570	NAP	88	YES/A, C
Indeno(1,2,3-cd)pyrene	22,000	NAP	880	YES/A, C
<u>Non-Carcinogenic PAHs (µg/kg)</u>				
Acenaphthene	460	NAP	470,000	no/B
Acenaphthylene*	9,400	NAP	230,000	no/B
Anthracene	10,000	NAP	2,300,000	no/B
Benzo(g,h,i)perylene*	22,000	NAP	230,000	no/B
Fluoranthene	46,000	NAP	310,000	no/B
Fluorene	1,200	NAP	310,000	no/B
Naphthalene	6,300	NAP	310,000	no/B
Phenanthrene*	14,000	NAP	230,000	no/B
Pyrene	55,000	NAP	230,000	no/B
<u>VOCs (µg/kg)</u>				
Acetone	150	NAP	780,000	no/B
<u>Inorganics (mg/kg)</u>				
Antimony	13	NAP	3.1	YES/A
Arsenic	21	11	0.43	no/D
Barium	190	52	550	no/B
Beryllium	2.1	0.58	0.15	YES/A
Cadmium	10	NAP	3.9	YES/A
Chromium	162	30	39	YES/A
Copper	92	8.3	27,000	no/B
Cyanide	5.6	NAP	160	no/B
Lead	300	12	400	no/B
Mercury	0.63	0.034	2.3	no/B
Nickel	45	8.1	160	no/B
Silver	3.2	NAP	39	no/B
Zinc	2,200	31	2,300	no/B

Footnotes appear on page 2.

**TABLE 5-11**  
**Selection of Constituents of Concern in Surficial Soils for SWMU 24**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

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Concentrations are reported in milligrams per kilogram (mg/kg).

*	Pyrene used as a surrogate.
A	Greater than risk-based concentration ( $10^{-6}$ for carcinogens and HQ=0.1 for non-carcinogens).
B	Less than risk-based concentration ( $10^{-6}$ for carcinogens and HQ=0.1 for non-carcinogens).
C	The chemical is a member of a chemical class which contains other COCs.
D	Less than 2X background concentration.
COC	Constituent of concern.
$\mu\text{g/kg}$	Micrograms per kilogram.
$\text{mg/kg}$	Milligrams per kilogram.
NAP	Not applicable.
PAHs	Polycyclic aromatic hydrocarbons.
VOCs	Volatile organic compounds.

**TABLE 5-12**  
**Selection of Constituents of Concern in Sludge for SWMU 24**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituents	Maximum Concentration	Background Concentration	Residential Risk-Based Screening Value	COC Basis
<u>Inorganics</u>				
Antimony	18	NAP	3.1	YES/A
Arsenic	18	11	0.43	no/D
Barium	240	52	550	no/B
Beryllium	3.1	0.58	0.15	YES/A
Cadmium	11	NAP	3.9	YES/A
Chromium	180	30	39	YES/A
Copper	130	8.3	27,000	no/B
Cyanide	4.7	NAP	160	no/B
Lead	1,703	12	400	YES/A
Nickel	43	8.1	160	no/B
Silver	6.1	NAP	39	no/B
Zinc	4,500	31	2,300	YES/A

Concentrations are reported in milligrams per kilogram (mg/kg).

- A Greater than risk-based concentration ( $10^{-6}$  for carcinogens and  $HQ=0.1$  for non-carcinogens).
- B Less than risk-based concentration ( $10^{-6}$  for carcinogens and  $HQ=0.1$  for non-carcinogens).
- C The chemical is a member of a chemical class which contains other COCs.
- D Less than 2X background concentration.
- COC Constituent of concern.
- NAP Not applicable.

**TABLE 5-13**  
**Selection of Constituents of Concern in Subsurface Soil for SWMUs 38 and 39**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituents	Maximum Concentration	Background Concentration	Industrial Risk-Based Screening Value	COC Basis
<u>VOCs</u> (µg/kg)				
Toluene	8.0	NAP	41,000,000	no/B
<u>Inorganics</u> (mg/kg)				
Antimony	9.6	NAP	82	no/B
Arsenic	5.2	11	3.8	no/D
Barium	420	52	14,000	no/B
Beryllium	2.8	0.58	1.3	YES/A
Chromium	19	30	1,000	no/B
Copper	110	8.3	100,000	no/B
Cyanide	1.3	NAP	4,100	no/B
Lead	36	12	400	no/B
Nickel	32	8.1	4,100	no/B
Silver	7.6	NAP	1,000	no/B
Zinc	190	31	61,000	no/B

- A Greater than risk-based concentration ( $10^{-6}$  for carcinogens and HQ=0.1 for non-carcinogens).
- B Less than risk-based concentration ( $10^{-6}$  for carcinogens and HQ=0.1 for non-carcinogens).
- C The chemical is a member of a chemical class which contains other COCs.
- D Less than 2X background concentration.
- COC Constituent of concern.
- µg/kg Micrograms per kilogram.
- mg/kg Milligrams per kilogram.
- NAP Not applicable.
- VOCs Volatile organic compounds.

**TABLE 5-14**  
**Selection of Constituents of Concern in Sludge for SWMU 39**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituents	Maximum Concentration	Background Concentration	Residential Risk-Based Screening Value	COC Basis
<u>Carcinogenic PAHs</u> (µg/kg)				
Benzo(k)fluoranthene	630	NAP	8,800	no/B
<u>Inorganics</u> (mg/kg)				
Antimony	15	NAP	3.1	YES/A
Arsenic	8.8	11	0.43	no/D
Barium	260	52	550	no/B
Beryllium	2.3	0.58	0.15	YES/A
Cadmium	12	NAP	3.9	YES/A
Copper	160	8.3	27,000	no/B
Cyanide	8.3	NAP	160	no/B
Lead	320	12	400	no/B
Nickel	25	8.1	160	no/B
Silver	4.6	NAP	39	no/B
Zinc	3,100	31	2,300	YES/A

Concentrations are reported in milligrams per kilogram (mg/kg).

A	Greater than risk-based concentration ( $10^{-6}$ for carcinogens and $HQ=0.1$ for non-carcinogens).
B	Less than risk-based concentration ( $10^{-6}$ for carcinogens and $HQ=0.1$ for non-carcinogens).
C	The chemical is a member of a chemical class which contains other COCs.
D	Less than 2X background concentration.
COC	Constituent of concern.
µg/kg	Micrograms per kilogram.
mg/kg	Milligrams per kilogram.
NAP	Not applicable.
PAHs	Polycyclic aromatic hydrocarbons.



**TABLE 5-15**  
**Summary of Constituents of Concern for Human Health Risk Assessment by Medium**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituents	Surficial Soil	Subsurface Soil		Sludge		
	SWMU 24	SWMU 23	SWMUs 38 & 39	SWMU 23	SWMU 24	SWMU 39
<u>PAHs</u>						
Benzo(a)anthracene	X			X		
Benzo(b)fluoranthene	X			X		
Benzo(k)fluoranthene	X			X		
Benzo(a)pyrene	X			X		
Chrysene	X			X		
Dibenzo(a,h)anthracene	X			X		
Indeno(1,2,3-cd)pyrene	X			X		
<u>Inorganics</u>						
Antimony	X				X	X
Arsenic		X		X		
Beryllium	X		X		X	X
Cadmium	X				X	X
Chromium	X			X	X	
Lead					X	
Mercury				X		
Nickel				X		
Selenium				X		
Zinc					X	X
PAHs	Polycyclic aromatic hydrocarbons.					
SWMU	Solid waste management unit.					

**TABLE 5-16**  
**Oral Reference Doses, Inhalation Reference Concentrations, Target Sites and Confidence Levels for Constituents of Concern**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	RfDo (mg/kg/day)		RfC (mg/m <sup>3</sup> )		Target Sites		Confidence Level/ Uncertainty Factor	
	Subchronic	Chronic	Subchronic	Chronic	Oral	Inhalation	Oral	Inhalation
<b>PAHs*</b>								
Benzo(a)anthracene	3.0E-01	3.0E-02	NA	NA	kidney	NA	low/3000	NA
Benzo(b)fluoranthene	3.0E-01	3.0E-02	NA	NA	kidney	NA	low/3000	NA
Benzo(k)fluoranthene	3.0E-01	3.0E-02	NA	NA	kidney	NA	low/3000	NA
Benzo(a)pyrene	3.0E-01	3.0E-02	NA	NA	kidney	NA	low/3000	NA
Chrysene	3.0E-01	3.0E-02	NA	NA	kidney	NA	low/3000	NA
Dibenz(a,h)anthracene	3.0E-01	3.0E-02	NA	NA	kidney	NA	low/3000	NA
Indeno(1,2,3-c,d)pyrene	3.0E-01	3.0E-02	NA	NA	kidney	NA	low/3000	NA
<b>Inorganics</b>								
Antimony	4.0E-04	4.0E-04	NA	NA	increased mortality	NA	low/1000	NA
Arsenic	3.0E-04	3.0E-04	NA	NA	skin	NA	medium/3	NA
Beryllium	5.0E-03	5.0E-03	NA	NA	none	NA	low/100	NA
Cadmium (food)**	NA	1.0E-03	NA	NA	kidney	NA	high/10	NA
Chromium III	1.0E+00	1.0E+00	NA	NA	liver	NA	low/100	NA
Chromium VI	2.0E-02	5.0E-03	NA	NA	NR	NA	low/500	NA
Lead	NA	NA	NA	NA	CNS	CNS	NA	NA
Mercury	NA	NA	3.0E-04	3.0E-04	kidney	CNS	NA	medium/30
Nickel	2.0E-02	2.0E-02	NA	NA	decreased body weight	NA	medium/300	NA
Selenium	5.0E-03	5.0E-03	NA	NA	selenosis	NA	medium/3	NA
Zinc	3.0E-01	3.0E-01	NA	NA	anemia	NA	medium/3	NA

References: IRIS, 1997; USEPA, 1997b.

\* Toxicity values are not available. Pyrene used as a surrogate for non-cancer effects.

\*\* The RfD for food is used to assess soil exposure.

CNS Central nervous system.

mg/kg/day Milligrams per kilogram per day.

mg/m<sup>3</sup> Milligrams per cubic meter.

NA Not available.

NR None reported.

PAHs Polycyclic aromatic hydrocarbons.

RfC Reference concentration.

RfDo Oral reference dose.

**TABLE 5-17**  
**Oral and Inhalation Cancer Slope Factors, Tumor Sites, and USEPA Cancer Classifications for Constituents of Concern**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	Oral CSF (kg-day/mg)	TEF	Inhalation Unit Risk (m³/µg)	Tumor site		USEPA Classification
				Oral	Inhalation	
<u>PAHs*</u>						
Benzo(a)anthracene	7.3E-01	0.1	8.8E-05	stomach	respiratory tract	B2
Benzo(b)fluoranthene	7.3E-01	0.1	8.8E-05	stomach	respiratory tract	B2
Benzo(k)fluoranthene	7.3E-02	0.01	8.8E-06	stomach	respiratory tract	B2
Benzo(a)pyrene	7.3E+00	1.0	8.8E-04	stomach	respiratory tract	B2
Chrysene	7.3E-03	0.001	8.8E-07	stomach	respiratory tract	B2
Dibenz(a,h)anthracene	7.3E+00	1.0	8.8E-04	stomach	respiratory tract	B2
Indeno(1,2,3-c,d)pyrene	7.3E-01	0.1	8.8E-05	stomach	respiratory tract	B2
<u>Inorganics</u>						
Arsenic	1.5E+00	NAP	4.3E-03	skin	respiratory tract	A
Beryllium	4.3E+00	NAP	2.4E-03	total tumors	lung	B2
Cadmium	NAP	NAP	1.8E-03	NA	respiratory tract	B1
Chromium VI	NAP	NAP	1.2E-02	NA	lung	A
Lead	NA	NAP	NA	NA	NA	B2
Nickel (refinery dust)	NAP	NAP	2.4E-04	NA	respiratory tract	A

References: IRIS, 1997; USEPA, 1997a.

\* Benzo(a)pyrene used as a surrogate. Appropriate toxicity value obtained by multiplying the benzo(a)pyrene toxicity values by the TEF.

CSF Cancer slope factor.

kg-day/mg Kilograms-day per milligram.

m<sup>3</sup>/μg Cubic meters per microgram.

NA Not available.

NAP Not applicable.

PAHs Polycyclic aromatic hydrocarbons.

TEF Toxicity equivalency factor.

**TABLE 5-18**  
**Dermal and Oral Absorption Efficiencies**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituents	Absorption Efficiency			
	Dermal		Oral	
<u>PAHs</u>	0.03	c	0.85	c
<u>Inorganics</u>				
Antimony	0.001	a	0.01	c
Arsenic	0.001	a	0.95	c
Beryllium	NAP		0.009	c
Cadmium	0.018	c	0.02	c
Chromium	0.001	a	0.02	c
Lead	0.0006	c	0.15	c
Mercury	0.026	c	0.15	c
Nickel	0.0023	c	0.043	c
Selenium	0.001	a	0.97	c
Zinc	0.001	a	0.30	c

a USEPA, 1996a.  
b Assumed.  
c ATSDR, 1997.  
NAP Not applicable.  
PAHs Polycyclic aromatic hydrocarbons.

**TABLE 5-19**  
**Adjusted Toxicity Values Used to Assess Dermal Exposure for Constituents of Concern**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	RfDo (mg/kg/day)		CSFo (kg-day/mg)	Oral Absorption Efficiency	RfDa (mg/kg/day)		CSFa (kg-day/mg)
	Subchronic	Chronic			Subchronic	Chronic	
<u>PAHs</u>							
Benzo(a)anthracene	3.0E-01	3.0E-02	7.3E-01	0.85	2.6E-01	2.6E-02	8.6E-01
Benzo(b)fluoranthene	3.0E-01	3.0E-02	7.3E-01	0.85	2.6E-01	2.6E-02	8.6E-01
Benzo(k)fluoranthene	3.0E-01	3.0E-02	7.3E-02	0.85	2.6E-01	2.6E-02	8.6E-02
Benzo(a)pyrene	3.0E-01	3.0E-02	7.3E+00	0.85	2.6E-01	2.6E-02	8.6E+00
Chrysene	3.0E-01	3.0E-02	7.3E-03	0.85	2.6E-01	2.6E-02	8.6E-03
Dibenzo(a,h)anthracene	3.0E-01	3.0E-02	7.3E+00	0.85	2.6E-01	2.6E-02	8.6E+00
Indeno(1,2,3-c,d)pyrene	3.0E-01	3.0E-02	7.3E-01	0.85	2.6E-01	2.6E-02	8.6E-01
<u>Inorganics</u>							
Antimony	4.0E-04	4.0E-04	NC	0.01	4.0E-06	4.0E-06	NC
Arsenic	3.0E-04	3.0E-04	1.5E+00	0.95	2.9E-04	2.9E-04	1.6E+00
Beryllium	5.0E-03	5.0E-03	4.3E+00	0.009	NAP	NAP	NAP
Cadmium (food)	NA	1.0E-03	NAP	0.02	NA	2.0E-05	NAP
Chromium III	1.0E+00	1.0E+00	NC	0.02	2.0E-02	2.0E-02	NC
Chromium VI	2.0E-02	5.0E-03	NAP	0.02	4.0E-04	1.0E-04	NAP
Lead	NA	NA	NA	0.15	NA	NA	NA
Mercury	NA	NA	NC	0.15	NA	NA	NC
Nickel	2.0E-02	2.0E-02	NAP	0.043	8.6E-04	8.6E-04	NAP
Selenium	5.0E-03	5.0E-03	NC	0.97	4.9E-03	4.9E-03	NC
Zinc	3.0E-01	3.0E-01	NC	0.30	9.0E-02	9.0E-02	NC

CSF      Cancer slope factor (CSFo = oral; CSFa = adjusted).  
kg-day/mg      Kilograms-day per milligram.  
mg/kg/day      Milligrams per kilogram per day.  
NA      Not available.  
NAP      Not applicable.  
NC      Not evaluated as a carcinogen.  
PAHs      Polycyclic aromatic hydrocarbons.  
RfD      Reference dose (RfDo = oral; RfDa = adjusted).

**TABLE 5-20**  
**Physical and Chemical Properties of Organic Constituents of Concern**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	Molecular Weight (g/mol)	Water Solubility (mg/L 25 °C)	Specific Gravity	Vapor Pressure (mm Hg 25 °C)	Henry's Law Constant (atm-m <sup>3</sup> /mol) (25 °C)	Diffusivity (cm <sup>2</sup> /sec)	Koc (mL/g)
<u>PAHs</u>							
Benzo(a)anthracene	228	0.0094 - 0.014	1.27	1.1E-07	8.00E-06	0.04564	1,400,000
Benzo(b)fluoranthene	252	0.0012	NA	5.0E-07	1.20E-05	0.04392	550,000
Benzo(k)fluoranthene	252	0.00055	NA	9.59E-11	1.04E-03	0.04392	4,400,000
Benzo(a)pyrene	252	0.0038 - 0.004	1.35	5.49E-09	< 2.4E-06	0.04653	398,000 - 1,900,000
Chrysene	228	0.0018 - 0.006	1.27	6.3E-09	3.15E-07	0.04531	240,000
Dibenzo(a,h)anthracene	278	0.00249 - 0.005	1.28	~10E-10 (20 °C)	7.33E-09	0.05707	1,700,000
Indeno(1,2,3-c,d)pyrene	276	0.062	NA	1.0E-09	2.96E-20	0.05728	31,000,000

References: Lyman et al., 1990; Montgomery and Welkom, 1990.

atm-m<sup>3</sup>/mol      Atmospheres-cubic meters per mole.  
 °C      Degrees Celsius.  
 cm<sup>2</sup>/sec      Square centimeters per second.  
 g/mol      Grams per mole.  
 Koc      Organic carbon partition coefficient.

mg/L      Milligrams per liter.  
 mm Hg      Millimeters of mercury.  
 NA      Not available.  
 PAHs      Polycyclic aromatic hydrocarbons.

**TABLE 5-21**  
**Receptor-Specific Exposure Parameters**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Parameter	(units)	Site Worker			Construction Worker	
		SWMU 23	SWMU 24	SWMU 38 & 39	SWMU 23	SWMU 38 & 39
APc	(days)	25550	25550	25550	25550	25550
APnc	(days)	4380	9125	9125	365	365
BW	(kg)	70	70	70	70	70
EF	(days/year)	12	250	250	90	90
EP	(years)	25	25	25	1	1
ET	(hours/day)	2	8	8	8	8
IRS	(mg/day)	50	50	50	480	480
SSA	(cm <sup>2</sup> )	3160	3160	3160	3160	3160

References: USEPA (1989, 1996a, 1995); professional judgement.

APc      Averaging period for cancer risk.  
APnc      Averaging period for non-cancer risk.  
BW      Body weight.  
cm<sup>2</sup>      Square centimeters.  
EF      Exposure frequency.  
EP      Exposure period.  
ET      Exposure time.  
IRs      Incidental ingestion rate of soil.  
kg      Kilogram.  
mg      Milligram.  
SSA      Exposed skin surface area.  
SWMU      Solid waste management unit.

**TABLE 5-22**  
**Risk Equations for Worker Exposure to Sludge, Surficial and Subsurface Soil**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

ROUTE-SPECIFIC RISKS:

Oral:

$$\frac{\text{ELCR}_o \text{ or } \text{HQ}_o}{\text{HQ}_o} = \frac{\text{EPC}_S \times \text{IR}_S \times \text{EF} \times \text{EP}}{\text{UC}_1 \times \text{BW} \times (\text{AP}_C \text{ or } \text{AP}_{NC}) \times [(1 / \text{CSF}_0) \text{ or } \text{RfD}_0]}$$

Dermal:

$$\frac{\text{ELCR}_d \text{ or } \text{HQ}_d}{\text{HQ}_d} = \frac{\text{EPC}_S \times \text{SSA} \times \text{SAR} \times \text{ABS} \times \text{EF} \times \text{EP}}{\text{UC}_1 \times \text{BW} \times (\text{AP}_C \text{ or } \text{AP}_{NC}) \times [(1 / \text{CSF}_a) \text{ or } \text{RfD}_a]}$$

Inhalation:

$$\frac{\text{ELCR}_i \text{ or } \text{HQ}_i}{\text{HQ}_i} = \frac{\text{EPC}_S \times (1 / \text{VF} + 1 / \text{PEF}) \times \text{ET} \times \text{EF} \times \text{EP}}{\text{UC}_2 \times (\text{AP}_C \text{ or } \text{AP}_{NC}) \times [(\text{UC}_3 / \text{UR}_i) \text{ or } \text{RfC}]}$$

where:

$$\text{VF} = Q / C \times \frac{(3.1416 \times \alpha \times T)^{1/2}}{2 \times \text{Dei} \times \text{Pa} \times \text{Kas}} \times \text{UC}_4$$

$$\text{PEF} = Q / C \times \frac{3,600 \text{ sec/hr}}{\text{RPF} \times (1 - G) \times (\text{Um} / \text{Ut})^3 \times F_x}$$

$$\alpha = \frac{\text{Dei} \times \text{Pa}}{\text{Pa} + [\rho_s \times (1 - \text{Pa}) / \text{Kas}]}$$

$$\text{Dei} = \text{Di} \times (\text{Pa}^{3.33} / \text{Pt}^2)$$

$$\text{K}_{as} = H / (\text{RT} \times \text{K}_d)$$

CANCER RISK:

$$\text{ELCR} = \text{ELCR}_o + \text{ELCR}_d + \text{ELCR}_i$$

NON-CANCER RISK:

$$\text{HI} = \text{HQ}_o + \text{HQ}_d + \text{HQ}_i$$



**TABLE 5-22**  
**Risk Equations for Worker Exposure to Sludge, Surficial and Subsurface Soil**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

where:

$\alpha$	Alpha; calculation intermediate ( $\text{cm}^2/\text{sec}$ ).
ABS	Dermal absorption efficiency.
$AP_C$	Averaging period for cancer effects (25,550 days); $70 \text{ yrs} \times 365 \text{ days/year}$ .
$AP_{NC}$	Averaging period for non-cancer effects (days); $(EP \times 365 \text{ days/year})$ .
BW	Body weight (kg).
CSF	Cancer slope factor for oral ( $CSF_o$ ) or dermal (adjusted to an absorbed dose, $CSF_d$ ) exposure ( $\text{kg-day/mg}$ ; inverse of $\text{mg/kg/day}$ ).
Dei	Effective diffusivity ( $\text{cm}^2/\text{sec}$ ).
Di	Diffusivity in air ( $\text{cm}^2/\text{sec}$ ).
EF	Exposure frequency (days/year).
ELCR	Excess lifetime cancer risk (unitless).
EPCs	Exposure point concentration in soil (arithmetic average) ( $\text{mg/kg}$ ).
EP	Exposure period (years).
ET	Exposure time (hours/day).
$F_x$	Function of $Ut/U_m$ ( $0.000152$ ) (unitless); $F_x = 0.18 \times [8x^3 + 12x] \times \exp[-(x^2)]$ , where $x = 0.886 \times (Ut/U_m)$ .
Foc	Fraction organic carbon in soil ( $0.02$ ).
G	Fraction of vegetative cover (unitless); conservatively assumed as zero.
H	Henry's Law Constant ( $\text{atm-m}^3/\text{mol}$ ).
HI	Hazard index (unitless); sum of the HQs.
HQ	Hazard quotient (unitless).
$IR_s$	Ingestion rate of soil ( $\text{mg/day}$ ).
Kas	Soil-air partition coefficient ( $\text{g soil}/\text{cm}^3 \text{ air}$ ).
Kd	Soil-water partition coefficient ( $\text{cm}^3/\text{g}$ or $\text{mL/g}$ ). Kd is calculated as $Foc \times Koc$ for organics.
Koc	Organic carbon partition coefficient ( $\text{cm}^3/\text{g}$ or $\text{mL/g}$ ); average of range in Table 5-20.
Pa	Air-filled soil porosity ( $0.20$ ) (unitless).
PEF	Particulate emission factor ( $\text{m}^3/\text{kg}$ ).
Pt	Total soil porosity ( $0.35$ ) (unitless).
$\rho_s$	True soil or particle density ( $2.65 \text{ g}/\text{cm}^3$ ).
Q/C	Emission flux per unit concentration ( $75.0 \text{ g}/\text{m}^2/\text{sec}$ )/( $\text{kg}/\text{m}^3$ ) (USEPA, 1996c).
RfC	Subchronic reference concentration for inhalation exposure ( $\text{mg}/\text{m}^3$ ).
RfD	Subchronic reference dose for oral ( $RfD_o$ ) or dermal (adjusted to an absorbed dose, $RfD_d$ ) intake ( $\text{mg}/\text{kg}/\text{day}$ ).
RPF	Respirable particle fraction ( $0.036 \text{ g}/\text{m}^2/\text{hr}$ ) (USEPA, 1991a).
RT	Product of the ideal gas constant ( $8.206 \times 10^{-5} \text{ atm-m}^3/\text{mol/K}$ ) and the Kelvin temperature ( $298 \text{ K}$ at $25^\circ\text{C}$ ) = $0.02445 \text{ atm-m}^3/\text{mol}$ .
SAR	Soil adherence rate ( $1 \text{ mg}/\text{cm}^2/\text{day}$ ).
SSA	Exposed skin surface area ( $\text{cm}^2$ ).
T	Exposure interval ( $7.9 \times 10^8 \text{ sec}$ ).
$UC_1$	Unit conversion #1 ( $10^6 \text{ mg}/\text{kg}$ ).
$UC_2$	Unit conversion #2 ( $24 \text{ hours}/\text{day}$ ).
$UC_3$	Unit conversion #3 ( $0.001 \text{ mg}/\mu\text{g}$ ).
$UC_4$	Unit conversion #4 ( $0.0001 \text{ m}^2/\text{cm}^2$ ).
$U_m$	Wind speed ( $3.13 \text{ m}/\text{sec}$ ).
$UR_i$	Unit cancer risk for inhalation exposure ( $\text{m}^3/\mu\text{g}$ ).
Ut	Equivalent threshold value of windspeed at 10 meters ( $12.8 \text{ m}/\text{sec}$ ).
VF	Volatilization factor ( $\text{m}^3/\text{kg}$ ).

**TABLE 5-22**  
**Risk Equations for Worker Exposure to Sludge, Surficial and Subsurface Soil**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE CALCULATION: Benzo(a)pyrene, Site Worker, SWMU 24 Surface Soil.

$$x = 0.886 \times \left[ (12.8 \text{ m / sec}) / (3.13 \text{ m / sec}) \right] = 3.62$$

$$F_x = 0.18 \times \left[ (8 \times 3.62^3) + (12 \times 3.62) \right] \times \exp \left[ - (3.62^2) \right] = 0.000152$$

$$\begin{aligned} \text{PEF} &= \left[ \frac{75.0 \text{ g / m}^2 \text{ / sec}}{\text{kg / m}^3} \right] \times \frac{(3,600 \text{ sec / hr})}{(0.036 \text{ g / m}^2 \text{ / hr}) \times (1 - 0) \times [(3.13 \text{ m / sec}) / (12.8 \text{ m / sec})]^3 \times (0.000152)} \\ &= 3.38 \times 10^{12} \text{ m}^3 \text{ / kg} \end{aligned}$$

$$K_{as} = \frac{(2.40 \times 10^{-6} \text{ atm} \cdot \text{m}^3 \text{ / mol})}{(0.02445 \text{ atm} \cdot \text{m}^3 \text{ / mol}) \times (1,149,000 \text{ cm}^3 \text{ / g}) \times (0.02)} = 4.27 \times 10^{-9} \text{ g / cm}^3$$

$$D_{ei} = (0.04653 \text{ cm}^2 \text{ / sec}) \times [(0.20)^{3.33} / (0.35)^2] = 0.001787 \text{ cm}^2 \text{ / sec}$$

$$\alpha = \frac{(0.001787 \text{ cm}^2 \text{ / sec}) \times 0.20}{0.20 + [(2.65 \text{ g / cm}^3) \times (1 - 0.20) / (4.27 \times 10^{-9} \text{ g / cm}^3)]} = 7.20 \times 10^{-13} \text{ cm}^2 \text{ / sec}$$

$$\begin{aligned} \text{VF} &= \frac{75.0 \text{ g / m}^2 \text{ / sec}}{\text{kg / m}^3} \times \frac{[3.1416 \times (7.20 \times 10^{-13} \text{ cm}^2 \text{ / sec}) \times (7.9 \times 10^8 \text{ sec})]^{1/2}}{2 \times (0.001787 \text{ cm}^2 \text{ / sec}) \times 0.20 \times (4.27 \times 10^{-9} \text{ g / cm}^3)} \times (10^{-4} \text{ m}^2 \text{ / cm}^2) \\ &= 1.03 \times 10^8 \text{ m}^3 \text{ / kg} \end{aligned}$$

Cancer Risk:

$$\begin{aligned} \text{ELCR}_o &= \frac{(6.9 \text{ mg / kg}) \times (50 \text{ mg / day}) \times (250 \text{ days / yr}) \times (25 \text{ yrs})}{(10^6 \text{ mg / kg}) \times (70 \text{ kg}) \times (25,550 \text{ days}) \times 1 / (7.3 \text{ kg} \cdot \text{day / mg})} \\ &= 8.8 \times 10^{-6} \end{aligned}$$

$$\begin{aligned} \text{ELCR}_d &= \frac{(6.9 \text{ mg / kg}) \times (3,160 \text{ cm}^2) \times (1 \text{ mg / cm}^2 \text{ / day}) \times (0.03) \times (250 \text{ days / yr}) \times (25 \text{ yrs})}{(10^6 \text{ mg / kg}) \times (70 \text{ kg}) \times (25,550 \text{ days}) \times 1 / (8.6 \text{ kg} \cdot \text{day / mg})} \\ &= 2.0 \times 10^{-5} \end{aligned}$$

**TABLE 5-22**  
**Risk Equations for Worker Exposure to Sludge, Surficial and Subsurface Soil**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

$$ELCR_i = \frac{(6.9 \text{ mg / kg}) \times [(1 / 1.03 \times 10^8 \text{ m}^3 / \text{kg}) + (1 / 3.38 \times 10^{12} \text{ m}^3 / \text{kg})] \times (8 \text{ hr / day}) \times (250 \text{ days / yr}) \times (25 \text{ yrs})}{(24 \text{ hr / day}) \times (25,550 \text{ days}) \times [(0.001 \text{ mg / } \mu\text{g}) / (8.8 \times 10^{-4} \text{ m}^3 / \mu\text{g})]}$$

$$= 4.9 \times 10^{-9}$$

$$ELCR = (8.8 \times 10^{-6}) + (2.0 \times 10^{-5}) + (4.9 \times 10^{-9}) = 2.8 \times 10^{-5}$$

Non-Cancer Risk:

$$HQ_o = \frac{(6.9 \text{ mg / kg}) \times (50 \text{ mg / day}) \times (250 \text{ days / yr}) \times (25 \text{ yrs})}{(10^6 \text{ mg / kg}) \times (70 \text{ kg}) \times (9,125 \text{ days}) \times (3.0 \times 10^{-2} \text{ mg / kg / day})}$$

$$= 1.1 \times 10^{-4}$$

$$HQ_d = \frac{(6.9 \text{ mg / kg}) \times (3,160 \text{ cm}^2) \times (1 \text{ mg / cm}^2 / \text{day}) \times (0.03) \times (250 \text{ days / yr}) \times (25 \text{ yrs})}{(10^6 \text{ mg / kg}) \times (70 \text{ kg}) \times (9,125 \text{ days}) \times (2.6 \times 10^{-2} \text{ mg / kg / day})}$$

$$= 2.5 \times 10^{-4}$$

$$HQ_i = \frac{(6.9 \text{ mg / kg}) \times [(1 / 1.03 \times 10^8 \text{ m}^3 / \text{kg}) + (1 / 3.38 \times 10^{12} \text{ m}^3 / \text{kg})] \times (8 \text{ hrs / day}) \times (250 \text{ days / yr}) \times (25 \text{ yrs})}{(24 \text{ hrs / day}) \times (9,125 \text{ days}) \times \text{NA}}$$

$$= \text{NA}$$

$$HI = (1.1 \times 10^{-4}) + (2.5 \times 10^{-4}) + \text{NA} = 3.6 \times 10^{-4} = 0.00036$$

**TABLE 5-23**  
**Risk Calculations for Site Worker Exposure to Sludge Waste for SWMU 23**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	EPCs (mg/kg)	CANCER RISK				NON-CANCER RISK			
		Route-Specific Risks			Calculated Risk	Route-Specific Risks			Calculated Risk
		Oral	Dermal	Inhalation		Oral	Dermal	Inhalation	
<u>PAHs</u>									
Benzo(a)anthracene	45 *	2.8E-07	6.2E-07	6.2E-11	8.9E-07	3.5E-05	7.7E-05	NA	0.00011
Benzo(b)fluoranthene	57 *	3.5E-07	7.8E-07	1.5E-10	1.1E-06	4.5E-05	9.8E-05	NA	0.00014
Benzo(k)fluoranthene	27 *	1.7E-08	3.7E-08	2.3E-11	5.3E-08	2.1E-05	4.6E-05	NA	0.000067
Benzo(a)pyrene	47 *	2.9E-06	6.4E-06	4.0E-10	9.3E-06	3.7E-05	8.0E-05	NA	0.00012
Chrysene	39 *	2.4E-09	5.3E-09	2.6E-13	7.7E-09	3.1E-05	6.7E-05	NA	0.000097
Dibenzo(a,h)anthracene	3.2 *	2.0E-07	4.4E-07	2.1E-12	6.3E-07	2.5E-06	5.5E-06	NA	0.0000080
Indeno(1,2,3-cd)pyrene	39 *	2.4E-07	5.3E-07	9.7E-13	7.7E-07	3.1E-05	6.7E-05	NA	0.000097
<u>Inorganics</u>									
Arsenic	42 *	5.3E-07	3.6E-08	5.1E-11	5.6E-07	3.3E-03	2.1E-04	NA	0.0035
Chromium	190 *	NAP	NAP	6.4E-10	6.4E-10	8.9E-04	2.8E-03	NA	0.0037
Mercury	8.6 *	NC	NC	NC	NC	NA	NA	2.3E-08	2.3E-08
Nickel	270 *	NC	NC	1.8E-11	1.8E-11	3.2E-04	1.1E-03	NA	0.0014
Selenium	150 *	NC	NC	NC	NC	7.0E-04	4.5E-05	NA	0.00075
TOTAL ELCR					1E-05	TOTAL HI			0.01

\* EPC is equal to the maximum detected concentration.  
 ELCR Excess lifetime cancer risk.  
 EPCs Exposure point concentration in sludge waste (Table 5-2) (mg/kg).  
 HI Hazard index.  
 mg/kg Milligrams per kilogram.  
 NA Not available.  
 NAP Not applicable.  
 NC Not a suspected carcinogen.  
 PAHs Polycyclic aromatic hydrocarbons.

**TABLE 5-24**  
**Risk Calculations for Construction Worker Exposure to Subsurface Soil for SWMU 23**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	EPCs (mg/kg)	CANCER RISK				NON-CANCER RISK			
		Route-Specific Risks			Calculated Risk	Route-Specific Risks			Calculated Risk
		Oral	Dermal	Inhalation		Oral	Dermal	Inhalation	
<hr/>									
<u>Inorganics</u>									
Arsenic	22	8.0E-07	5.6E-09	3.2E-11	8.0E-07	1.2E-01	8.4E-04	NA	0.12
TOTAL ELCR					8E-07	TOTAL HI			0.1

ELCR      Excess lifetime cancer risk.  
EPCs      Exposure point concentration in subsurface soil (Table 5-1) (mg/kg).  
HI        Hazard index.  
mg/kg    Milligrams per kilogram.  
NA        Not available.

**TABLE 5-25**  
**Risk Calculations for Site Worker Exposure to Surficial Soil for SWMU 24**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	EPCs (mg/kg)	CANCER RISK				NON-CANCER RISK			
		Route-Specific Risks			Calculated Risk	Route-Specific Risks			Calculated Risk
		Oral	Dermal	Inhalation		Oral	Dermal	Inhalation	
<b>PAHs</b>									
Benzo(a)anthracene	16	2.0E-06	4.6E-06	1.8E-09	6.6E-06	2.6E-04	5.7E-04	NA	0.00083
Benzo(b)fluoranthene	7.2	9.2E-07	2.1E-06	1.6E-09	3.0E-06	1.2E-04	2.6E-04	NA	0.00037
Benzo(k)fluoranthene	3.1	4.0E-08	8.8E-08	2.2E-10	1.3E-07	5.1E-05	1.1E-04	NA	0.00016
Benzo(a)pyrene	6.9	8.8E-06	2.0E-05	4.9E-09	2.8E-05	1.1E-04	2.5E-04	NA	0.00036
Chrysene	7.0	8.9E-09	2.0E-08	3.9E-12	2.9E-08	1.1E-04	2.5E-04	NA	0.00036
Dibenzo(a,h)anthracene	0.31	4.0E-07	8.8E-07	1.7E-11	1.3E-06	5.1E-06	1.1E-05	NA	0.000016
Indeno(1,2,3-cd)pyrene	5.7	7.3E-07	1.6E-06	1.2E-11	2.4E-06	9.3E-05	2.0E-04	NA	0.00030
<b>Inorganics</b>									
Antimony	5.2	NC	NC	NC	NC	6.4E-03	4.0E-02	NA	0.047
Beryllium	1.2	9.0E-07	NAP	6.8E-11	9.0E-07	1.2E-04	NAP	NA	0.00012
Cadmium	6.2	NAP	NAP	2.6E-10	2.6E-10	3.0E-03	1.7E-01	NA	0.176
Chromium	59	NAP	NAP	1.7E-08	1.7E-08	5.8E-03	1.8E-02	NA	0.024
TOTAL ELCR					4E-05	TOTAL HI			0.2

ELCR Excess lifetime cancer risk.  
EPCs Exposure point concentration in surface soil (Table 5-3) (mg/kg).  
HI Hazard index.  
mg/kg Milligrams per kilogram.  
NA Not available.  
NAP Not applicable.  
PAHs Polycyclic aromatic hydrocarbons.

**TABLE 5-26**  
**Risk Calculations for Site Worker Exposure to Sludge for SWMU 24**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	EPCs (mg/kg)	CANCER RISK				NON-CANCER RISK			
		Route-Specific Risks			Calculated Risk	Route-Specific Risks			Calculated Risk
		Oral	Dermal	Inhalation		Oral	Dermal	Inhalation	
<u>Inorganics</u>									
Antimony	18 *	NC	NC	NC	NC	2.2E-02	1.4E-01	NA	0.16
Beryllium	3.1 *	2.3E-06	NAP	1.7E-10	2.3E-06	3.0E-04	NAP	NA	0.00030
Cadmium	11 *	NAP	NAP	4.6E-10	4.6E-10	5.4E-03	3.1E-01	NA	0.31
Chromium	180 *	NAP	NAP	5.1E-08	5.1E-08	1.8E-02	5.6E-02	NA	0.073
Lead	1,700 *	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	4,500 *	NC	NC	NC	NC	7.3E-03	1.5E-03	NA	0.0089
TOTAL ELCR					2E-06	TOTAL HI			0.6

\* EPC is equal to the maximum detected concentration.  
 ELCR Excess lifetime cancer risk.  
 EPCs Exposure point concentration in sludge waste (Table 5-4) (mg/kg).  
 HI Hazard index.  
 mg/kg Milligrams per kilogram.  
 NA Not available.  
 NAP Not applicable.  
 NC Not a suspected carcinogen.

**TABLE 5-27**  
**Risk Calculations for Site Worker Exposure to Sludge for SWMU 39**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	EPCs (mg/kg)	CANCER RISK				NON-CANCER RISK			
		Route-Specific Risks			Calculated Risk	Route-Specific Risks			Calculated Risk
		Oral	Dermal	Inhalation		Oral	Dermal	Inhalation	
<u>Inorganics</u>									
Antimony	15 *	NC	NC	NC	NC	1.8E-02	1.2E-01	NA	0.13
Beryllium	2.3 *	1.7E-06	NAP	1.3E-10	1.7E-06	2.3E-04	NAP	NA	0.00023
Cadmium	12 *	NAP	NAP	5.1E-10	5.1E-10	5.9E-03	3.3E-01	NA	0.34
Zinc	3,100 *	NC	NC	NC	NC	5.1E-03	1.1E-03	NA	0.0061
TOTAL ELCR					2E-06	TOTAL HI			0.5

\* EPC is equal to the maximum detected concentration.

ELCR Excess lifetime cancer risk.

EPCs Exposure point concentration in sludge waste (Table 5-6) (mg/kg).

HI Hazard index.

mg/kg Milligrams per kilogram.

NA Not available.

NAP Not applicable.

NC Not a suspected carcinogen.



**TABLE 5-28**  
**Risk Calculations for Construction Worker Exposure to Subsurface Soil for SWMUs 38 and 39**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	EPCs (mg/kg)	CANCER RISK				NON-CANCER RISK			
		Route-Specific Risks			Calculated Risk	Route-Specific Risks			Calculated Risk
		Oral	Dermal	Inhalation		Oral	Dermal	Inhalation	
<u>Inorganics</u>									
Beryllium	0.74	7.7E-08	NAP	6.0E-13	7.7E-08	2.5E-04	NAP	NA	0.00025
TOTAL ELCR					8E-08	TOTAL HI			0.0003

ELCR      Excess lifetime cancer risk.  
EPCs      Exposure point concentration in subsurface soil (Table 5-5) (mg/kg).  
HI        Hazard index.  
mg/kg    Milligrams per kilogram.  
NA        Not available.  
NAP      Not applicable.

**TABLE 5-29**  
**Remedial Goal Option Equations for Soil or Sludge Exposure**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

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ROUTE-SPECIFIC RGOs:

Oral:

$$(RGO_o)_C = \frac{TCR \times BW \times AT_C \times (10^6 \text{ mg/kg})}{IR_s \times EF \times ED \times CSF_o}$$

Dermal:

$$(RGO_d)_C = \frac{TCR \times BW \times AT_C \times (10^6 \text{ mg/kg})}{SSA \times SAR \times ABS_d \times EF \times ED \times CSF_a}$$

Inhalation:

$$(RGO_i)_C = \frac{TCR \times (24 \text{ hr/day}) \times AT_C}{\left[ \left( \frac{1}{VF} \right) + \left( \frac{1}{PEF} \right) \right] \times ET \times EF \times ED \times \left( UR_i / 0.001 \frac{\text{mg}}{\mu\text{g}} \right)}$$

where:

$$VF = Q/C \times \frac{(3.1416 \times \alpha \times T)^{1/2}}{2 \times Dei \times Pa \times Kas} \times 10^{-4} \text{ m}^2 / \text{cm}^2$$

$$PEF = Q/C \times \frac{3,600 \text{ sec/hr}}{RPF \times (1-G) \times (Um/U_t)^3 \times F_X}$$

$$\alpha = \frac{Dei \times Pa}{Pa + [\rho_s \times (1 - Pa) / Kas]}$$

$$Dei = Di \times (Pa^{3.33} / Pt^2)$$

$$Kas = H / (RT \times Kd)$$

CANCER EFFECTS RGO:

$$RGO_c = \frac{1}{\frac{1}{(RGO_o)_C} + \frac{1}{(RGO_d)_C} + \frac{1}{(RGO_i)_C}}$$

**TABLE 5-29**  
**Remedial Goal Option Equations for Soil or Sludge Exposure**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

where:

$\alpha$	Alpha; calculation intermediate ( $\text{cm}^2/\text{sec}$ ).
$\text{ABS}_d$	Dermal absorption efficiency (unitless), constituent specific.
$\text{AT}_c$	Averaging time for cancer effects (years).
BW	Body weight (kg).
CSF	Cancer slope factor for oral ( $\text{CSF}_o$ ) or dermal (adjusted to an absorbed dose, $\text{CSF}_a$ ) exposure ( $\text{kg}\cdot\text{day}/\text{mg}$ ; inverse of $\text{mg}/\text{kg}/\text{day}$ ).
$\text{Dei}$	Effective diffusivity ( $\text{cm}^2/\text{sec}$ ).
$\text{Di}$	Diffusivity in air ( $\text{cm}^2/\text{sec}$ ); constituent specific.
ED	Exposure duration (years).
EF	Exposure frequency (days/year).
ET	Exposure time (hr/day).
$\text{Foc}$	Fraction organic carbon in soil (unitless) (0.02).
$\text{F}_x$	Function of $\text{Ut}/\text{Um}$ (unitless) (0.000152); $\text{F}_x = 0.18 \times [8x^3 + 12x] \times \exp(-x^2)$ , where $x = 0.886 \times (\text{Ut}/\text{Um})$ .
G	Fraction of vegetative cover (unitless); conservatively assumed as zero.
H	Henry's Law Constant ( $\text{atm}\cdot\text{m}^3/\text{mol}$ ); constituent specific.
$\text{IR}_s$	Incidental soil ingestion rate ( $\text{mg}/\text{day}$ ).
Kas	Soil-air partition coefficient ( $\text{g soil}/\text{cm}^3 \text{ air}$ ).
Kd	Soil-water partition coefficient ( $\text{cm}^3/\text{g}$ or $\text{mL}/\text{g}$ ); constituent specific. Kd is calculated as $\text{Foc} \times \text{Koc}$ .
Koc	Organic carbon partition coefficient ( $\text{cm}^3/\text{g}$ or $\text{mL}/\text{g}$ ); constituent specific.
Pa	Air-filled soil porosity (0.20, unitless).
PEF	Particulate emission factor ( $\text{m}^3/\text{kg}$ ).
Pt	Total soil porosity (0.35, unitless).
Q/C	Emission flux per unit concentration ( $\text{g}/\text{m}^2/\text{sec}$ )/( $\text{kg}/\text{m}^3$ ).
ps	True soil or particle density ( $2.65 \text{ g}/\text{cm}^3$ ).
RGO	Remedial goal options for soil ( $\text{mg}/\text{kg}$ ); which are based on the route-specific RGOs ( $\text{RGO}_o$ for the oral route, $\text{RGO}_d$ for the dermal route, and $\text{RGO}_i$ for the inhalation route).
RPF	Respirable particle fraction ( $0.036 \text{ g}/\text{m}^2/\text{hr}$ ).
RT	Product of the ideal gas constant ( $8.206 \times 10^{-5} \text{ atm}\cdot\text{m}^3/\text{mol}/\text{K}$ ) and the Kelvin temperature ( $298 \text{ K}$ at $25^\circ\text{C}$ ) = $0.02445 \text{ atm}\cdot\text{m}^3/\text{mol}$ .
SAR	Skin adherence rate ( $1 \text{ mg}/\text{cm}^2/\text{day}$ ).
SSA	Exposed skin surface area ( $\text{cm}^2$ ).
T	Exposure interval ( $7.9\text{E}+08 \text{ sec}$ ).
TCR	Target cancer risk (unitless).
Um	Wind speed, annual average ( $3.13 \text{ m}/\text{sec}$ ).
$\text{UR}_i$	Unit cancer risk for inhalation exposure ( $\text{m}^3/\mu\text{g}$ ).
Ut	Equivalent threshold value of windspeed at 10 meters ( $12.8 \text{ m}/\text{sec}$ ).
VF	Volatilization factor ( $\text{m}^3/\text{kg}$ ).

SAMPLE CALCULATION: Benzo(a)pyrene exposure based on  $\text{TCR} = 10^{-6}$ .

$$\text{Kas} = \frac{2.4 \times 10^{-6} \text{ atm} \cdot \text{m}^3 / \text{mol}}{0.02445 \text{ atm} \cdot \text{m}^3 / \text{mol} \times 0.02 \times 1,149,000 \text{ cm}^3 / \text{g}} = 4.27 \times 10^{-9} \text{ g} / \text{cm}^3$$

**TABLE 5-29**  
**Remedial Goal Option Equations for Soil or Sludge Exposure**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

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$$Dei = 0.04653 \text{ cm}^2/\text{sec} \times (0.2^{3.33}/0.35^2) = 0.00179 \text{ cm}^2/\text{sec}$$

$$\alpha = \frac{0.00179 \text{ cm}^2/\text{sec} \times 0.2}{0.2 + [2.65 \text{ g/cm}^3 (1-0.2)/4.27 \times 10^{-9} \text{ g/cm}^3]} = 7.2 \times 10^{-13} \text{ cm}^2/\text{sec}$$

$$PEF = 75.0 (\text{g/m}^2/\text{sec}) / (\text{kg/m}^3) \times \frac{3,600 \text{ sec/hr}}{0.036 \text{ g/m}^2/\text{hr} \times (1-0) \times (3.13 \text{ m/sec} / 128 \text{ m/sec})^3 \times 0.000152} = 338 \times 10^{12} \text{ m}^3/\text{kg}$$

$$VF = 75.0 (\text{g/m}^2/\text{sec}) / (\text{kg/m}^3) \times \frac{[3.1416 \times (7.2 \times 10^{-13} \text{ cm}^2/\text{sec}) \times (7.9 \times 10^8 \text{ sec})]^{1/2}}{2 \times 0.00179 \times 0.2 \times (4.27 \times 10^{-9} \text{ g/cm}^3)} = 1.04 \times 10^8 \text{ m}^3/\text{kg}$$

$$RGO_o = \frac{(1 \times 10^{-6}) \times 70 \text{ kg} \times 25,550 \text{ days} \times 10^6 \text{ mg/kg}}{50 \text{ mg/day} \times 250 \text{ days/yr} \times 25 \text{ yrs} \times 7.3 \text{ kg} \cdot \text{day/mg}} = 0.78 \text{ mg/kg}$$

$$RGO_d = \frac{(1 \times 10^{-6}) \times 70 \text{ kg} \times 25,550 \text{ days} \times 10^6 \text{ mg/kg}}{3,160 \text{ cm}^2 \times 1 \text{ mg/cm}^2/\text{day} \times 0.03 \times 250 \text{ days/yr} \times 25 \text{ yrs} \times 8.6 \text{ kg} \cdot \text{day/mg}} = 0.35 \text{ mg/kg}$$

$$RGO_i = \frac{(1 \times 10^{-6}) \times 24 \text{ hr/day} \times 25,550 \text{ days}}{\left[ \left( \frac{1}{1.04 \times 10^8 \text{ m}^3/\text{kg}} \right) + \left( \frac{1}{3.38 \times 10^{12} \text{ m}^3/\text{kg}} \right) \right] \times 8 \text{ hrs/day} \times 250 \text{ days/yr} \times 25 \text{ yrs} \times \left( \frac{8.8 \times 10^{-4} \text{ m}^3/\text{kg}}{0.001 \text{ mg}/\mu\text{g}} \right)}$$

$$= 1.4 \times 10^3 \text{ mg/kg}$$

$$RGO_c = \frac{1}{\frac{1}{0.78 \text{ mg/kg}} + \frac{1}{0.35 \text{ mg/kg}} + \frac{1}{1.4 \times 10^3 \text{ mg/kg}}} = 0.24 \text{ mg/kg}$$

**TABLE 5-30**  
**Remedial Goal Option Concentrations for SWMU 23 Sludge**  
**Based on Site Worker Exposure**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	CANCER EFFECTS			EPC (mg/kg)
	Target Cancer Risk Concentration at:			
	10 <sup>-4</sup>	10 <sup>-5</sup>	10 <sup>-6</sup>	
<u>PAHs</u>				
Benzo(a)anthracene	5.1E+03	5.1E+02	5.1E+01	45
Benzo(b)fluoranthene	5.1E+03	5.1E+02	5.1E+01	57
Benzo(k)fluoranthene	5.0E+04	5.0E+03	5.0E+02	27
Benzo(a)pyrene	5.1E+02	5.1E+01	5.1E+00	47
Chrysene	5.1E+05	5.1E+04	5.1E+03	39
Dibenzo(a,h)anthracene	5.1E+02	5.1E+01	5.1E+00	3.2
Indeno(1,2,3-c,d)pyrene	5.1E+03	5.1E+02	5.1E+01	39
<u>Metals</u>				
Arsenic	7.4E+03	7.4E+02	7.4E+01	42
Chromium*	2.9E+10	2.9E+09	2.9E+08	190
Mercury	NC	NC	NC	8.6
Nickel	1.4E+12	1.4E+11	1.4E+10	270
Selenium	NC	NC	NC	150

\* Values for chromium based on chromium VI.  
EPC exceeds concentration at target risk level.  
EPC Exposure point concentration (Table 5-2).  
mg/kg Milligrams per kilogram.  
NC Not evaluated as a carcinogen.  
PAHs Polycyclic aromatic hydrocarbons.

**TABLE 5-31**  
**Remedial Goal Option Concentrations for SWMUs 24 and 39 Surficial Soil and Sludge**  
**Based on Site Worker Exposure**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	CANCER EFFECTS			EPC	EPC
	Target Cancer Risk Concentrations at:			SWMU 24*	SWMU 39**
	10 <sup>-4</sup>	10 <sup>-5</sup>	10 <sup>-6</sup>	(mg/kg)	
<u>PAHs</u>					
Benzo(a)anthracene	2.4E+02	2.4E+01	2.4E+00	16 / -	NAP
Benzo(b)fluoranthene	2.4E+02	2.4E+01	2.4E+00	7.2 / -	NAP
Benzo(k)fluoranthene	2.4E+03	2.4E+02	2.4E+01	3.1 / -	NAP
Benzo(a)pyrene	2.4E+01	2.4E+00	2.4E-01	6.9 / -	NAP
Chrysene	2.4E+04	2.4E+03	2.4E+02	7 / -	NAP
Dibenzo(a,h)anthracene	2.4E+01	2.4E+00	2.4E-01	0.31 / -	NAP
Indeno(1,2,3-c,d)pyrene	2.4E+02	2.4E+01	2.4E+00	5.7 / -	NAP
<u>Metals</u>					
Antimony	NC	NC	NC	5.2 / 18	15
Beryllium	1.3E+02	1.3E+01	1.3E+00	1.2 / 3.1	2.3
Cadmium	2.3E+09	2.3E+08	2.3E+07	6.2 / 11	12
Chromium***	3.5E+08	3.5E+07	3.5E+06	59 / 180	NAP
Lead	NA	NA	NA	- / 1,700	NAP
Zinc	NC	NC	NC	- / 4,500	3,100

\* EPC for surficial soil/sludge waste (Tables 5-3 / 5-4).

\*\* EPC for sludge waste only (Table 5-6).

\*\*\* Values for chromium based on chromium VI.

EPC exceeds concentration at target risk level.

EPC Exposure point concentration (Tables 5-3, 5-4, and 5-6).

mg/kg Milligrams per kilogram.

NA Not available.

NAP Not applicable.

NC Not evaluated as a carcinogen.

PAHs Polycyclic aromatic hydrocarbons.

**TABLE 5-32**  
**Risk-Based Remedial Goal Option for Site Worker Exposure to Lead in SWMU 24 Sludge**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

$$RGO_{\text{lead}} = \frac{(\text{PbB}_{\text{adult,central,goal}} - \text{PbB}_{\text{adult,0}}) \times AT}{\text{BKSF} \times \text{IR}_s \times \text{AF}_s \times \text{EF}_s}$$

where:

$$\text{PbB}_{\text{adult,central,goal}} = \frac{\text{PbB}_{\text{fetal,0.95,goal}}}{\text{GSD}_{\text{i,adult}}^{1.645} \times R_{\text{fetal/maternal}}}$$

where:

$\text{AF}_s$	Absolute gastrointestinal absorption fraction (0.12).
$AT$	Averaging time (365 days/year).
$\text{BKSF}$	Biokinetic slope factor ( $0.4 \mu\text{g/dL}$ per $\mu\text{g/day}$ ).
$\text{EF}_s$	Exposure frequency (250 days/year).
$\text{GSD}_{\text{i,adult}}$	Geometric standard deviation (1.8).
$\text{IR}_s$	Ingestion rate for soil ( $0.05 \text{ g/day}$ ).
$\text{PbB}_{\text{adult,0}}$	Typical blood lead concentration in adults in the absence of site exposures ( $2 \mu\text{g/dL}$ ).
$\text{PbB}_{\text{adult,central,goal}}$	Goal for central blood lead concentrations that have site exposures ( $\mu\text{g/dL}$ ).
$\text{PbB}_{\text{fetal,0.95,goal}}$	Goal for the 95 <sup>th</sup> percentile blood lead concentrations among fetuses born to woman having exposures to site soils ( $10 \mu\text{g/dL}$ ).
$R_{\text{fetal/maternal}}$	Constant of proportionality between fetal blood lead concentration at birth and maternal blood lead concentration (0.9).
$RGO_{\text{lead}}$	Risk-based remedial goal option for lead in soil ( $\text{mg/kg}$ ).

#### Sample Calculation

$$\begin{aligned} \text{PbB}_{\text{adult,central,goal}} &= \frac{10 \mu\text{g/dL}}{1.8^{1.645} \times 0.9} \\ &= 4.23 \mu\text{g/dL} \end{aligned}$$

$$\begin{aligned} RGO_{\text{lead}} &= \frac{(4.23 \mu\text{g/dL} - 2 \mu\text{g/dL}) \times 365 \text{ days/year}}{0.4 \frac{\mu\text{g/dL}}{\mu\text{g/day}} \times 0.05 \text{ g/day} \times 0.12 \times 250 \text{ days/year}} \times (1,000 \text{ g/kg}) \times (0.001 \text{ mg}/\mu\text{g}) \\ &= 1,400 \text{ mg/kg} \end{aligned}$$

**TABLE 5-33**  
**Input Probability Distribution Functions for Monte Carlo Simulation Random Variables**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Random Variable	Input Probability Distribution Function	Reference
BW	CUSTOM (min-51; 5%-58.6; 10%-62.3; 15%-64.9; 25%-68.7; 50%-76.9; 75%-85.6; 85%-91.3; 90%-95.7; 95%-102.7; max-107); correlated with SSA (0.6)	[a (min, max); b(percentiles)]
EF	SWMU 23: UNIFORM (min-2, max-12) Other SWMUs: TRIANGULAR (min-130, likeliest-240, max-255)	PJ PJ, based on [c]
EP	CUSTOM (min-0; 25%-1; 50%-3.8; 75%-11; 90%-19; 95%-25; max-30)	[a]
EPC	CUSTOM (measured concentration data) SWMU 24, Surface Soil: Benzo(a)anthracene: LOGNORMAL (mean-2.67, StdDev- 9.09) Benzo(a)pyrene: LOGNORMAL (mean-1.658, StdDev- 4.082) Dibenzo(a,h)anthracene: LOGNORMAL (mean-0.40, StdDev- 0.38) Indeno(1,2,3-cd)pyrene: LOGNORMAL (mean-1.44, StdDev- 3.38)	[d]
ET	SWMU 23: UNIFORM (min-0.5, max-2) Other SWMUs: TRIANGULAR (min-0, likeliest-8, max-9)	PJ PJ
IR <sub>s</sub>	CUSTOM (min-0, max-216; 67%-17; 83%-148) × 0.5 = CUSTOM (min-0, max-108; 67%-8.5; 83%-74)	[a]
SAR	NORMAL (mean-0.03, SD-0.003)	[b,e]
SSA	NORMAL (mean-2460, SD-240); correlated with BW (0.6)	[b]

#### References

- PJ Professional judgment.  
[a] AIHC (1994).  
[b] USEPA (1995).  
[c] Residential distribution (Smith, 1994), modified to correspond to site worker exposure.  
[d] Lognormal distributions based on analytical data; derived using Crystal Ball 4.0® software.  
[e] Kissel, et al. (1996).

#### Definitions

- BW Body weight (kilograms).  
EF Exposure frequency (days/year).  
EPC Exposure point concentration (mg/kg).  
EP Exposure period (years).  
ET Exposure time per day (hours/day).  
IR<sub>s</sub> Ingestion rate of soil (mg/day).  
SAR Soil adherence rate (mg/cm<sup>2</sup>/day).  
SSA Exposed skin surface area (cm<sup>2</sup>).  
StdDev Standard deviation.

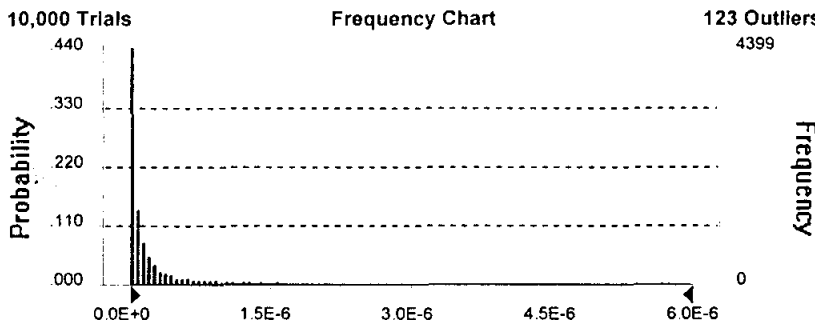
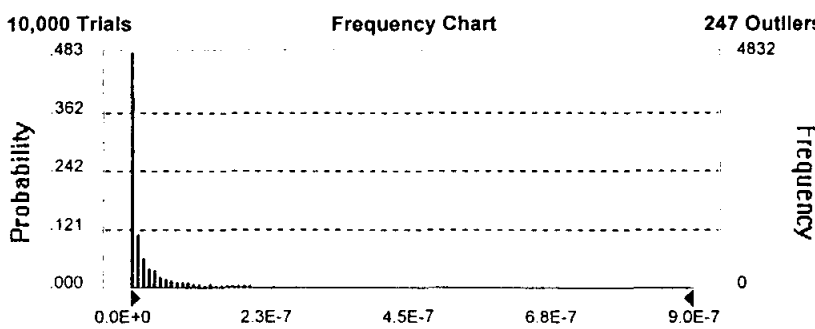


**TABLE 5-34**  
**Results of Monte Carlo Simulation of Total Cancer Risk for Site Worker Exposure**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Exposure Scenario	Cancer Risk (Total ELCR)			Output Probability Distribution for Total ELCR
	Median	Mean	95% *	
<u>SWMU 23</u>				
Sludge Waste	3E-08	2E-07	9E-07	<p>Forecast: ELCR_t  Frequency Chart  272 Outliers  3451</p>
<u>SWMU 24</u>				
Sludge Waste	4E-08	2E-07	1E-06	<p>Forecast: ELCR_t  Frequency Chart  288 Outliers  3475</p>

Footnotes appear on page 2.

**TABLE 5-34**  
**Results of Monte Carlo Simulation of Total Cancer Risk for Site Worker Exposure**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Exposure Scenario	Cancer Risk (Total ELCR)			Output Probability Distribution for Total ELCR
	Median	Mean	95% *	
<u>SWMU 24</u> Surficial Soil	8E-08	5E-07	2E-06	<p align="center"><b>Forecast: ELCR_t</b>  <b>Frequency Chart</b></p> <p align="right">123 Outliers 4399</p> 
<u>SWMUs 38 &amp; 39</u> Sludge Waste	1E-08	9E-08	4E-07	<p align="center"><b>Forecast: ELCR_t</b>  <b>Frequency Chart</b></p> <p align="right">247 Outliers 4832</p> 

\* 95th percentiles of the predicted risk probability distributions.

ELCR Excess lifetime cancer risk.

**TABLE 5-35**  
**Selection of Constituents of Ecological Concern in Subsurface Soil for SWMU 23**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituents	Maximum Concentration	Background Concentration	ORNL Ecological Soil PRG	COEC Basis
<u>VOCs</u> (µg/kg)				
Acetone	110	NAP	NA	YES/A
<u>Inorganics</u> (mg/kg)				
Arsenic	30	11	2.66	YES/B,C
Barium	180	52	208	no/D
Beryllium	0.70	0.58	10	no/D,E
Cadmium	2.5	NAP	3	no/D
Chromium	19	30	0.4	no/E
Copper	22	8.3	50	no/D
Cyanide	0.43	NAP	NA	YES/A
Lead	19	12	50	no/D,E
Nickel	66	8.1	24	YES/B,C
Zinc	430	31	26	YES/B,C

A	No background or PRG value available for comparison; therefore retained as a COEC.
B	Greater than two times background value.
C	Greater than ORNL ecological soil PRG.
D	Less than ORNL ecological soil PRG.
E	Less than two times background value.
COEC	Constituent of ecological concern.
µg/kg	Micrograms per kilogram.
mg/kg	Milligrams per kilogram.
NA	Not available.
NAP	Not applicable.
ORNL	Oak Ridge National Laboratory.
PRG	Preliminary remediation goal.
VOCs	Volatile organic compounds.

**TABLE 5-36**  
**Selection of Constituents of Ecological Concern in Sludge for SWMU 23**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituents	Maximum Concentration	Background Concentration	ORNL Ecological Soil PRG	COEC Basis
<u>Carcinogenic PAHs (µg/kg)</u>				
Benzo(a)anthracene	45,000	NAP	NA	YES/A
Benzo(b)fluoranthene	57,000	NAP	NA	YES/A
Benzo(k)fluoranthene	27,000	NAP	NA	YES/A
Benzo(a)pyrene	47,000	NAP	NA	YES/A
Chrysene	39,000	NAP	NA	YES/A
Dibenzo(a,h)anthracene	3,200	NAP	NA	YES/A
Indeno(1,2,3-cd)pyrene	39,000	NAP	NA	YES/A
<u>Non-Carcinogenic PAHs (µg/kg)</u>				
Acenaphthylene	11,000	NAP	NA	YES/A
Anthracene	3,800	NAP	NA	YES/A
Benzo(g,h,i)perylene	40,000	NAP	NA	YES/A
Fluoranthene	25,000	NAP	NA	YES/A
Fluorene	5,400	NAP	NA	YES/A
Naphthalene	4,100	NAP	NA	YES/A
Phenanthrene	14,000	NAP	NA	YES/A
Pyrene	31,000	NAP	NA	YES/A
<u>VOCs (µg/kg)</u>				
2-Butanone (MEK)	530	NAP	NA	YES/A
Acetone	1,200	NAP	NA	YES/A
Ethylbenzene	220	NAP	780,000,000	no/B
Toluene	5,100	NAP	200	no/B
Xylenes	900	NAP	NA	YES/A
<u>Semi-VOCs (µg/kg)</u>				
4-Methylphenol	10,000	NAP	NA	YES/A
<u>Inorganics (mg/kg)</u>				
Arsenic	42	11	2.66	YES/B,C
Barium	450	52	208	YES/B,C
Chromium	190	30	0.4	YES/B,C
Copper	240	8.3	50	YES/B,C
Cyanide	136	NAP	NA	YES/A
Lead	51	12	50	YES/B,C
Mercury	8.6	0.034	0.0185	YES/B,C
Nickel	270	8.1	24	YES/B,C
Selenium	150	NAP	0.79	YES/C
Silver	8.0	NAP	2	YES/C
Zinc	300	31	26	YES/B,C

Footnotes appear on page 2.

**TABLE 5-36**  
**Selection of Constituents of Ecological Concern in Sludge for SWMU 23**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

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Concentrations are reported in milligrams per kilogram (mg/kg).

A	No background or PRG value available for comparison; therefore retained as a COEC.
B	Greater than two times background value.
C	Greater than ORNL ecological soil PRG.
D	Less than ORNL ecological soil PRG.
E	Less than two times background value.
COEC	Constituent of ecological concern.
µg/kg	Micrograms per kilogram.
mg/kg	Milligrams per kilogram.
NA	Not available.
NAP	Not applicable.
ORNL	Oak Ridge National Laboratory.
PAHs	Polycyclic aromatic hydrocarbons.
PRG	Preliminary remediation goal.
VOCs	Volatile organic compounds.

**TABLE 5-37**  
**Selection of Constituents of Ecological Concern in Subsurface Soil for SWMUs 38 and 29**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituents	Maximum Concentration	Background Concentration	ORNL Ecological Soil PRG	COC Basis
<u>VOCs</u> (µg/kg)				
Toluene	8.0	NAP	NA	YES/A
<u>Inorganics</u> (mg/kg)				
Antimony	9.6	NAP	5	YES/C
Arsenic	5.2	11	2.66	no/E
Barium	420	52	208	YES/B,C
Beryllium	2.8	0.58	10	no/D
Chromium	19	30	0.4	no/E
Copper	110	8.3	50	YES/B,C
Cyanide	1.3	NAP	NA	YES/A
Lead	36	12	50	no/D
Nickel	32	8.1	24	YES/B,C
Silver	7.6	NAP	2	YES/C
Zinc	190	31	26.3	YES/B,C

A	No background or PRG value available for comparison; therefore retained as a COEC.
B	Greater than two times background value.
C	Greater than ORNL ecological soil PRG.
D	Less than ORNL ecological soil PRG.
E	Less than two times background value.
COEC	Constituent of ecological concern.
µg/kg	Micrograms per kilogram.
mg/kg	Milligrams per kilogram.
NA	Not available.
NAP	Not applicable.
ORNL	Oak Ridge National Laboratory.
PRG	Preliminary remediation goal.
VOCs	Volatile organic compounds.

**TABLE 5-38**  
**Selection of Constituents of Ecological Concern in Sludge for SWMU 39**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituents	Maximum Concentration	Background Concentration	ORNL Ecological Soil PRG	COC Basis
<u>Carcinogenic PAHs (µg/kg)</u>				
Benzo(k)fluoranthene	630	NAP	NA	YES/A
<u>Inorganics (mg/kg)</u>				
Antimony	15	NAP	5	YES/C
Arsenic	8.8	11	2.66	no/E
Barium	260	52	208	YES/B,C
Beryllium	2.3	0.58	10	no/D
Cadmium	12	NAP	3	YES/C
Copper	160	8.3	50	YES/B,C
Cyanide	8.3	NAP	NA	YES/A
Lead	320	12	50	YES/B,C
Nickel	25	8.1	24	YES/B,C
Silver	4.6	NAP	2	YES/C
Zinc	3,100	31	26.3	YES/B,C

A	No background or PRG value available for comparison; therefore retained as a COEC.
B	Greater than two times background value.
C	Greater than ORNL ecological soil PRG.
D	Less than ORNL ecological soil PRG.
E	Less than two times background value.
COEC	Constituent of ecological concern.
µg/kg	Micrograms per kilogram.
mg/kg	Milligrams per kilogram.
NA	Not available.
NAP	Not applicable.
ORNL	Oak Ridge National Laboratory.
PRG	Preliminary remediation goal.
VOCs	Volatile organic compounds.

**TABLE 5-39**  
**Toxicological Benchmark Values for Eastern Cottontail Rabbit**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	Test Species [a]	Experimental Value [b] (mg/kg/day)		NOAEL (mg/kg/day)	Measurement Endpoint	Reference [c]	Scaling Factor	Rabbit Toxicological Benchmark [d] (mg/kg/day)
<u>VOCs</u>								
2-Butanone	NA	NA		NA	NA	NA	NA	NA
Acetone	Rat	100	e	10	Reproduction	Sample et al., 1996	0.73	7.35
Toluene	Mouse	259.8	f	25.98	Reproduction	Sample et al., 1996	0.40	10.33
Xylene (mixed isomers)	Mouse	2.06	g	2.06	Reproduction	Sample et al., 1996	0.40	0.82
<u>Semi-VOCs</u>								
4-Methylphenol	NA	NA		NA	NA	NA	NA	NA
Acenaphthylene	NA	NA		NA	NA	NA	NA	NA
Anthracene	Mouse	1,000	e	100	No observed effects	IRIS, 1997	0.40	39.76
Benzo(a)anthracene	NA	NA		NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA		NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NA	NA		NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA		NA	NA	NA	NA	NA
Benzo(a)pyrene	Mouse	10	f	1	Reproduction	Sample et al., 1996	0.40	0.40
Chrysene	NA	NA		NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA		NA	NA	NA	0.40	NA
Fluoranthene	Mouse	125	e	12.5	Nephropathy	IRIS, 1997	0.40	4.97
Fluorene	Mouse	125	e	12.5	Decreased RBC	IRIS, 1997	0.40	4.97
Indeno(1,2,3-cd)pyrene	NA	NA		NA	NA	NA	NA	NA
Naphthalene	NA	NA		NA	NA	NA	NA	NA
Phenanthrene	NA	NA		NA	NA	NA	NA	NA
Pyrene	Mouse	75	e	7.5	Kidney Effects	IRIS, 1997	0.40	2.98
<u>Inorganics</u>								
Arsenic	Mouse	1.26	f	0.126	Reproduction	Sample et al., 1996	0.40	0.05
Barium (chloride)	Rat	5.1	g	5.1	Growth	Sample et al., 1996	0.73	3.75
Cadmium (soluble salt)	Rat	1	g	1	Reproduction	Sample et al., 1996	0.63	0.63
Chromium III	Rat	2,737	g	2,737	Reproduction	Sample et al., 1996	0.73	2,011.39
Chromium VI	Rat	13.14	f	1.3	Growth, food consmp	Sample et al., 1996	0.73	0.96

Footnotes on page 2.



**TABLE 5-39**  
**Toxicological Benchmark Values for Eastern Cottontail Rabbit**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	Test Species [a]	Experimental Value [b] (mg/kg/day)	NOAEL (mg/kg/day)	Measurement Endpoint	Reference [c]	Scaling Factor	Rabbit Toxicological Benchmark [d] (mg/kg/day)
<u>Inorganics (cont.)</u>							
Copper (sulfate)	Mink	11.71 g	11.71	Reproduction	Sample et al., 1996	0.96	11.19
Cyanide (K cyanide)	Rat	68.7 g	68.7	Reproduction	Sample et al., 1996	0.61	41.94
Lead (acetate)	Rat	8 g	8	Reproduction	Sample et al., 1996	0.73	5.88
Mercury (sulfide)	Mouse	13.3 g	13.3	Reproduction	Sample et al., 1996	0.40	5.29
Mercury (methyl mercury)	Rat	0.032 g	0.032	Reproduction	Sample et al., 1996	0.73	0.02
Nickel (sulfate)	Rat	40 g	40	Reproduction	Sample et al., 1996	0.73	29.40
Selenium	Rat	0.2 g	0.2	Reproduction	Sample et al., 1996	0.73	0.15
Silver	Mouse	18.1 f	1.8	Systemic	Rungby & Danscher, 1984	0.35	0.63
Zinc (oxide)	Rat	160 g	160	Reproduction	Sample et al., 1996	0.73	117.58

[a] Species in which the experimental (literature derived) value was reported.

[b] Daily dose reported in the literature to cause toxicity endpoint.

[c] Reference where experimental value was found.

[d] Toxicological benchmark value = Benchmark value x scaling factor. Scaling factor is discussed in text.

[e] Subchronic NOAEL

[f] Chronic LOAEL

[g] Chronic NOAEL

[h] Subchronic LOAEL

mg/kg/day Milligrams per kilogram per day.

LOAEL Lowest observed adverse effect level.

NA Not available.

NOAEL No observed adverse effect level.

**TABLE 5-40**  
**Soil-To-Plant Uptake Factors**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	Log Kow [a]	Soil-to-Plant Uptake Factor [b]
<u>VOCs</u>		
Acetone	-0.24	0
2-Butanone	0.29	1.86
Ethylbenzene	3.15	0.56
Toluene	2.8	0.60
Xylene	3.2	0.56
<u>Semi-VOCs</u>		
4-Methylphenol	3.01	0.58
Acenaphthene	4.33	0.48
Acenaphthylene	4.1	0.49
Anthracene	4.54	0.47
Benzo(a)anthracene	5.91	0.41
Benzo(a)pyrene [c]	6.5	0.39
Benzo(b)fluoranthene	6.57	0.39
Benzo(g,h,i)perylene	7.1	0.38
Benzo(k)fluoranthene	6.85	0.38
Chrysene	5.91	0.41
Dibenzo(a,h)anthracene	6.5	0.39
Fluoranthene	5.22	0.44
Fluorene	4.38	0.48
Indeno(1,2,3-cd)pyrene	7.7	0.36
Naphthalene	4.7	0.46
Phenanthrene	4.6	0.47
Pyrene	5.3	0.43
<u>Metals</u>		
Antimony	NA	0.20 [d]
Arsenic	NA	0.04 [d]
Barium	NA	0.15 [d]
Beryllium	NA	0.01 [d]
Cadmium	NA	0.55 [d]
Chromium III	NA	0.008 [d]
Chromium VI	NA	0.008 [d]
Copper	NA	0.40 [d]
Lead	NA	0.45 [d]
Mercury	NA	0.90 [d]
Nickel	NA	0.06 [d]
Selenium	NA	0.025 [d]
Silver	NA	0.40 [d]
Zinc	NA	1.5 [d]

[a] Montgomery and Welkom, 1990.

[b] Calculated according to Travis and Arms, 1988, unless otherwise noted.

[c] Yadiv et al., 1981.

[d] Baes et al., 1984

Kow Octanol/water partition coefficient.

**TABLE 5-41**  
**Exposure of Cottontail Rabbit to Soil and Associated Hazard Quotients, SWMU 23**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	Cs [a] (mg/kg)	PU [b] (unitless)	Cveg (mg/kg)	Iv (kg/day)	Is (kg/day)	H (unitless)	BW (kg)	Exposure (mg/kg/day)	Benchmark [c] (mg/kg/day)	Hazard Quotient (unitless)
<u>VOCs</u>										
Acetone	0.061	0	0	0.237	0.015	1.0	1.2	0.0008	7.35	1.0E-04
<u>Inorganics</u>										
Arsenic	22	0.04	0.132	0.237	0.015	1.0	1.2	0.3011	0.05	6.0E+00
Cyanide	0.36	1	0.054	0.237	0.015	1.0	1.2	0.0152	41.94	3.6E-04
Nickel	66	0.06	0.594	0.237	0.015	1.0	1.2	0.9423	29.4	3.2E-02
Zinc	230	1.5	51.75	0.237	0.015	1.0	1.2	13.0956	117.58	1.1E-01
									HI	6

[a] Constituent concentration in SWMU 23 subsurface soil from Table 5-1.

[b] Plant uptake factor discussed in text.

[c] Toxicological benchmark from Table 5-39.

BW Body weight.

Cs Constituent concentration in subsurface soil.

Cveg Constituent concentration in vegetation (Cs x PU).

H Home range/area of concern. Assumed to be 1.

HI Hazard index (sum of the hazard quotients).

Is Ingestion rate of soil.

Iv Ingestion rate of vegetation.

mg/kg/day Milligrams per kilograms per day.

NA Not available.

PU Plant uptake factor.

**TABLE 5-42**  
**Exposure of Cottontail Rabbit to Sludge and Associated Hazard Quotients, SWMU 23**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	Cs [a] (mg/kg)	PU [b] (unitless)	Cveg (mg/kg)	Iv (kg/day)	Is (kg/day)	H (unitless)	BW (kg)	Exposure (mg/kg/day)	Benchmark [c] (mg/kg/day)	Hazard Quotient (unitless)
<u>VOCs</u>										
2-Butanone (MEK)	0.53	1.86	0.15	0.237	0.015	1.0	1.2	0.0358	NA	NA
Acetone	1.2	0	0	0.237	0.015	1.0	1.2	0.0150	7.35	2.0E-03
Xylenes	0.90	0.56	0.0756	0.237	0.015	1.0	1.2	0.0262	0.82	3.2E-02
<u>SVOCs</u>										
4-Methylphenol	10	0.58	0.87	0.237	0.015	1.0	1.2	0.2968	NA	NA
Acenaphthylene	11	0.04	0.066	0.237	0.015	1.0	1.2	0.1505	NA	NA
Anthracene	3.8	0.47	0.2679	0.237	0.015	1.0	1.2	0.1004	39.76	2.5E-03
Benzo(a)anthracene	45	0.41	2.7675	0.237	0.015	1.0	1.2	1.1091	NA	NA
Benzo(b)fluoranthene	57	0.39	3.3345	0.237	0.015	1.0	1.2	1.3711	NA	NA
Benzo(g,h,i)perylene	40	0.38	2.28	0.237	0.015	1.0	1.2	0.9503	NA	NA
Benzo(k)fluoranthene	27	0.38	1.539	0.237	0.015	1.0	1.2	0.6415	NA	NA
Benzo(a)pyrene	47	0.39	2.7495	0.237	0.015	1.0	1.2	1.1305	0.4	2.8E+00
Chrysene	39	0.41	2.3985	0.237	0.015	1.0	1.2	0.9612	NA	NA
Dibenzo(a,h)anthracene	3.2	0.39	0.1872	0.237	0.015	1.0	1.2	0.0770	NA	NA
Fluoranthene	25	0.44	1.65	0.237	0.015	1.0	1.2	0.6384	4.97	1.3E-01
Fluorene	5.4	0.48	0.3888	0.237	0.015	1.0	1.2	0.1443	4.97	2.9E-02
Indeno(1,2,3-cd)pyrene	39	0.36	2.106	0.237	0.015	1.0	1.2	0.9034	NA	NA
Naphthalene	4.1	0.46	0.2829	0.237	0.015	1.0	1.2	0.1071	NA	NA
Phenanthrene	14	0.47	0.987	0.237	0.015	1.0	1.2	0.3699	NA	NA
Pyrene	31	0.43	1.9995	0.237	0.015	1.0	1.2	0.7824	2.98	2.6E-01
<u>Inorganics</u>										
Arsenic	42	0.04	0.252	0.237	0.015	1.0	1.2	0.5748	0.05	1.1E+01
Barium	450	0.15	10.125	0.237	0.015	1.0	1.2	7.6247	3.75	2.0E+00
Chromium	190	0.008	0.228	0.237	0.015	1.0	1.2	2.4200	2011.39	1.2E-03
Copper	240	0.4	14.4	0.237	0.015	1.0	1.2	5.8440	11.19	5.2E-01
Cyanide	140	1	21	0.237	0.015	1.0	1.2	5.8975	41.94	1.4E-01
Lead	51	0.45	3.4425	0.237	0.015	1.0	1.2	1.3174	5.88	2.2E-01
Mercury	8.6	0.90	1.161	0.237	0.015	1.0	1.2	0.3368	0.02	1.7E+01
Nickel	270	0.06	2.430	0.237	0.015	1.0	1.2	3.8549	29.4	1.3E-01
Selenium	150	0.0	0.5625	0.237	0.015	1.0	1.2	1.9861	0.15	1.3E+01
Silver	8.0	0.4	0.48	0.237	0.015	1.0	1.2	0.1948	0.63	3.1E-01
Zinc	300	1.5	67.5	0.237	0.015	1.0	1.2	17.0813	117.58	1.5E-01
									HI	950

Footnotes on page 2.

**TABLE 5-42**  
**Exposure of Cottontail Rabbit to Sludge and Associated Hazard Quotients, SWMU 23**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

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{a}	Constituent concentration in SWMU 23 sludge waste samples from Table 5-2.
[b]	Plant uptake factor discussed in text.
[c]	Toxicological benchmark from Table 5-39.
BW	Body weight.
Cs	Constituent concentration in waste sludge.
Cveg	Constituent concentration in vegetation (Cs x PU).
H	Home range/area of concern. Assumed to be 1.
HI	Hazard index (sum of the hazard quotients).
Is	Ingestion rate of soil.
Iv	Ingestion rate of vegetation.
mg/kg/day	Milligrams per kilograms per day.
NA	Not available.
PU	Plant uptake factor.

**TABLE 5-43**  
**Exposure of Cottontail Rabbit to Soil and Associated Hazard Quotients, SWMU 38 and 39**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	Cs [a] (mg/kg)	PU [b] (unitless)	Cveg (mg/kg)	Iv (kg/day)	Is (kg/day)	H (unitless)	BW (kg)	Exposure (mg/kg/day)	Benchmark [c] (mg/kg/day)	Hazard Quotient (unitless)
<u>VOCs</u>										
Toluene	0.0040	0.6	0.0004	0.237	0.015	1.0	1.2	0.0001	10.33	1.2E-05
<u>Inorganics</u>										
Antimony	4.1	0.2	0.123	0.237	0.015	1.0	1.2	0.0755	0.05	1.5E+00
Barium	400	0.15	9	0.237	0.015	1.0	1.2	6.7775	3.75	1.8E+00
Copper	25	0.4	1.5	0.237	0.015	1.0	1.2	0.6088	11.19	5.4E-02
Cyanide	0.28	1	0.042	0.237	0.015	1.0	1.2	0.0118	41.94	2.8E-04
Nickel	29	0.06	0.261	0.237	0.015	1.0	1.2	0.4140	29.4	1.4E-02
Silver	1.2	0.4	0.072	0.237	0.015	1.0	1.2	0.0292	0.63	4.6E-02
Zinc	91	1.5	20.475	0.237	0.015	1.0	1.2	5.1813	117.58	4.4E-02
									HI	3

- [a] Constituent concentration in SWMU 38 and 39 subsurface soil from Table 5-5.  
[b] Plant uptake factor discussed in text.  
[c] Toxicological benchmark from Table 5-39.
- BW Body weight.  
Cs Constituent concentration in subsurface soil.  
Cveg Constituent concentration in vegetation (Cs x PU).  
H Home range/area of concern. Assumed to be 1.  
HI Hazard index (sum of the hazard quotients).  
Is Ingestion rate of soil.  
Iv Ingestion rate of vegetation.  
mg/kg/day Milligrams per kilograms per day.  
NA Not available.  
PU Plant uptake factor.

**TABLE 5-44**  
**Exposure of Cottontail Rabbit to Sludge and Associated Hazard Quotients, SWMU 39**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Constituent	Cs [a] (mg/kg)	PU [b] (unitless)	Cveg (mg/kg)	Iv (kg/day)	Is (kg/day)	H (unitless)	BW (kg)	Exposure (mg/kg/day)	Benchmark [c] (mg/kg/day)	Hazard Quotient (unitless)
<u>SVOCs</u>										
Benzo(k)fluoranthene	0.63	0.38	0.03591	0.237	0.015	1.0	1.2	0.0150	NA	NA
<u>Inorganics</u>										
Antimony	15	0.2	0.45	0.237	0.015	1.0	1.2	0.2764	0.05	5.5E+00
Barium	260	0.15	5.85	0.237	0.015	1.0	1.2	4.4054	3.75	1.2E+00
Cadmium	12	0.04	0.072	0.237	0.015	1.0	1.2	0.1642	0.01	1.6E+01
Copper	160	0.4	9.6	0.237	0.015	1.0	1.2	3.8960	11.19	3.5E-01
Cyanide	8.3	1	1.245	0.237	0.015	1.0	1.2	0.3496	41.94	8.3E-03
Lead	320	0.45	21.6	0.237	0.015	1.0	1.2	8.2660	5.88	1.4E+00
Nickel	25	0.06	0.225	0.237	0.015	1.0	1.2	0.3569	29.4	1.2E-02
Silver	4.6	0.4	0.276	0.237	0.015	1.0	1.2	0.1120	0.63	1.8E-01
Zinc	3,100	1.5	697.5	0.237	0.015	1.0	1.2	176.5063	117.58	1.5E+00
									HI	27

[a] Constituent concentration in SWMU 38 and 39 sludge waste samples from Table 5-6.

[b] Plant uptake factor discussed in text.

[c] Toxicological benchmark from Table 5-39.

BW Body weight.

Cs Constituent concentration in subsurface soil.

Cveg Constituent concentration in vegetation (Cs x PU).

H Home range/area of concern. Assumed to be 1.

HI Hazard index (sum of the hazard quotients).

Is Ingestion rate of soil.

Iv Ingestion rate of vegetation.

mg/kg/day Milligrams per kilograms per day.

NA Not available.

PU Plant uptake factor.

**VOLUME I**  
**APPENDIX A**  
**FIELD LOGS**



**VOLUME I**  
**APPENDIX A.1**  
**SURFICIAL SOIL SAMPLING**

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 1 of 15  
Site Location Gloss Industries, Birmingham, AL Location Name SB-02 24-SL0002 KT 1/6/98  
Sample I.D. No. 970618-LD-24-SL0002 (0-1) KT Coded/Replicate No. \_\_\_\_\_  
Date 6/18/97 Time of Sampling: Begin 1600 End \_\_\_\_\_  
Weather Sunny 90's  
Site Description Down Bank From Lime Pile Just East of Drainage Ditch

### SAMPLING DATA

Collection Method Stainless Steel Hand Auger  
Depth (0-1) Moisture Content Moist  
Color Moodswan (5429/9); Light Brown MOTTLED (5425/6) Odor —  
Description CLAY, STIFF (CL)

### Analyses Required

### Container Description

	From Lab <u>X</u> or G&M _____
Priority Pollutant Metals & Barium (6010 & 7471)	1 x 4 oz
VOCs (8260)	1 x 4 oz
SVOCs (8270)	1 x 4 oz
Cyanide (9010)	1 x 4 oz
Full TCLP	2 x 8 oz <u>sed</u>
Sample Monitoring (TIP, OVA, HNU, etc.)	

Remarks Mixed  
Non-VOC's Composites in stainless steel bowl with stainless steel spoon  
Low AT Surface

Sampler(s)

J. Hughes/David Page

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 2 of 15

Site Location Sloss Industries, Birmingham, AL Location Name ~~SB-03~~ 24-SL0003 (KT) 1/6/98

Sample I.D. No. 970617-LD-24-SL 0003 (0-1") (KT) Coded/Replicate No. 970617-LD-24-FB0001  
970617-LD-24-FB0002  
970617-LD-24-FB0003

Date 6/17/97 Time of Sampling: Begin 1210 End 1300

Weather OVERCAST 80's

Site Description ± 10' EAST OF GATE AS INDICATED ON PROPOSED LOCATION MAP

### SAMPLING DATA

Collection Method Stainless Steel Hand Auger

Depth (0-1) Moisture Content MOIST

Color MOD BROWN (5YR 3/1) w/ LIME VERT DARK RED (5R2/6) Odor NONE

Description CLAY w/ SOME ROCK (RED MTN SLS + SOME POSSIBLE L.S.)  
CLAY WAS VERY BRITTLE w/ SOME ROOTS (CL)

### Analyses Required

### Container Description

<p>Priority Pollutant Metals &amp; Barium (6010 &amp; 7471)</p> <p>VOCs (8260)</p> <p>SVOCs (8270)</p> <p>Cyanide (9010)</p> <p><del>Full TCLP</del></p> <p>Sample Monitoring (TIP, OVA, HNU, etc.)</p>	<p>From Lab <u>X</u> or G&amp;M</p> <p>1 x 4 oz</p> <p>1 x 4 oz</p> <p>1 x 4 oz</p> <p>1 x 4 oz</p> <p><del>2 x 8 oz (H)</del></p>
---	--

Remarks MIXED Non VOC's Composted in stainless steel bowl with stainless steel spoon SOIL AT 8" UNDER M FLD DUST

EB + FB COLLECTED, FB + EB SPILT w/ GUARDIAN ALSO CRYSTAL SPRINGS DISTILLED H<sub>2</sub>O  
(8710 5/19/99 AP 14:43 EXP 5/19/99) FB  
" " AP 18:14 " " 23

Sampler(s) J. Hughes/David Page



## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 3 of 15  
Site Location Gloss Industries, Birmingham, AL Location Name SB-04 1/6/98 24-SL0004  
Sample I.D. No. 970617 -LD- 2A -SL0004 (0-1) (KT) Coded/Replicate No. —  
Date 6/17/97 Time of Sampling: Begin 1530 End —  
Weather LIGHT RAIN 70's, CLOUDY  
Site Description PARTWAY BETWEEN FLOWOUT PILE ACCESS GATE & BTF GATE AS PER SAMPLING PLAN. ADJACENT TO TWO TELEPHONE POLES & PROPERTY LINE FENCE

### SAMPLING DATA

Collection Method Stainless Steel Hand Auger  
Depth (0-1) Moisture Content MOIST  
Color MOBROWN (SYE 14) & GRAYISH ORANGE MOTTLED (10YR2/14) Odor —  
Description CLAY, PLASTIC, COHESIVE. CCH

### Analyses Required

### Container Description

Priority Pollutant Metals & Barium (6010 & 7471)	From Lab <u>X</u> or G&M <u>—</u>
VOCs (8260)	1 x 4 oz
SVOCs (8270)	1 x 4 oz
Cyanide (9010)	1 x 4 oz
<del>Full TCLP</del>	<del>2 x 8 oz JH</del>

Sample Monitoring (TIP, OVA, HNU, etc.) —

Remarks MIXED  
Non-VOC's COMPOSTED in stainless steel bowl with stainless steel spoon  
LOW AT SURFACE

Sampler(s) J. Hughes/David Page



## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 4 of 15  
Site Location Sloss Industries, Birmingham, AL Location Name SB-05 1/6/98 24-SL0005  
Sample I.D. No. 970617 -LD-24 -SL0005 (0-1) (K) Coded/Replicate No. SPUT W/ GUARDIAN  
Date 6/17/97 Time of Sampling: Begin 1615 End \_\_\_\_\_  
Weather Cloudy, 70's, Very Light Rain  
Site Description SE CORNER OF SLOW 2d AS HT PROPOSED IN PLANS

### SAMPLING DATA

Collection Method Stainless Steel Hand Auger  
Depth (0-1) Moisture Content Moist → SATURATED  
Color Dusky Brown (5YR 2/2) Odor —  
Description CLAY, Very loose, w/ organics (roots) (CH)

### Analyses Required

### Container Description

	From Lab <u>X</u> or G&M _____
Priority Pollutant Metals & Barium (6010 & 7471)	1 x 4 oz
VOCs (8260)	1 x <u>4</u> oz
SVOCs (8270)	1 x <u>4</u> oz
Cyanide (9010)	1 x <u>4</u> oz
FATT TCLP-H	<u>2 x 8 oz</u> Jd
Sample Monitoring (TIP, OVA, HNU, etc.)	

Remarks Non-VOC's Mixed Composited in stainless steel bowl with stainless steel spoon  
SPUT COLLECTED FOR GUARDIAN TO ANALYZE (LABELED W/SAME #) SOIL AT SURFACE

Sampler(s) J. Hughes/David Page

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 5 of 15

Site Location Gloss Industries, Birmingham, AL Location Name SB-06 <sup>1/6/95</sup> 24-SL0006

Sample I.D. No. 970617-LD-24-SL0006 <sup>(0-1)</sup> (K) Coded/Replicate No. MS/40 + 970617-LD-24-SL0006

Date 6/17/97 Time of Sampling: Begin 1700 End

Weather SUNNY 70's

Site Description 1st LOCATION N OF SB-05 AS INDICATED IN WORKPLAN

### SAMPLING DATA

Collection Method Stainless Steel Hand Auger

Depth (0-1) Moisture Content MOIST

Color MOD BROWN (SYR 31A) & GRAYISH ORANGE (10YR 7/1) MOTTLED Odor -

Description CLAY, STIFF, COHESIVE, W/ SOME PEBBLE SIZED ROCK (L.S.) (CL)

### Analyses Required

### Container Description

<p>Priority Pollutant Metals &amp; Barium (6010 &amp; 7471)</p> <p>VOCs (8260)</p> <p>SVOCs (8270)</p> <p>Cyanide (9010)</p> <p><del>Full TCEP-JL</del></p> <p>Sample Monitoring (TIP, OVA, HNU, etc.)</p>	<p>From Lab <u>X</u> or G&amp;M</p> <p>1 x 4 oz</p> <p>1 x 4 oz</p> <p>1 x 4 oz</p> <p>1 x 4 oz</p> <p><del>2 x 8 oz</del> <u>JP</u></p>
--	--

Remarks Non-VOC's <sup>MIXED</sup> ~~Composited~~ in stainless steel bowl with stainless steel spoon

SOIL LOCATED UNDER 8" OF FILL DIRT

Sampler(s) J. Hughes/David Page

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 6 of 15  
 Site Location Gloss Industries, Birmingham, AL Location Name SB-07 24-SL0007  
 Sample I.D. No. 970617 -LD-2A -SL0007 (0-1') (A) Coded/Replicate No. -  
 Date 6/17/97 Time of Sampling: Begin 1240 End -  
 Weather Sunny 70's W-N wind 0-5MPH  
 Site Description 2nd Soil Borehole N of SWS, ± 1 FT ABOVE DRAINAGE DITCH

### SAMPLING DATA

Collection Method Stainless Steel Hand Auger  
 Depth (0-1) Moisture Content SATURATE  
 Color VERY PALE ORANGE (10YR 8/2) Odor CHEMICAL  
 Description CLAY TO VERY SANDY CLAY, PLASTIC, w/ A FEW BLOBS OF BLACK  
"TAR" LIKE MATERIAL w/ CHEMICAL ODOR (CH)

### Analyses Required

### Container Description

Priority Pollutant Metals & Barium (6010 & 7471)	From Lab <u>X</u> or G&M <u>-</u>
	1 x 4 oz
VOCs (8260)	1 x 4 oz
SVOCs (8270)	1 x 4 oz
Cyanide (9010)	1 x 4 oz
Full TCLP	<del>2 x 8 oz</del> 1 qt

Sample Monitoring (TIP, OVA, HNU, etc.) -

Remarks Non-VOC's MIXED Compositing in stainless steel bowl with stainless steel spoon

Soil located beneath ± 1 FT OF FLOOD DUST

Sampler(s) J. Hughes/David Page

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 7 of 15  
Site Location Gloss Industries, Birmingham, AL Location Name SB 08 170196 24-SL0008  
Sample I.D. No. 97061B -LD- 24 -SL0008 (0-1) (K1) Coded/Replicate No. -  
Date 6/18/97 Time of Sampling: Begin 955 End -  
Weather Cloud, Bo's, N wing  
Site Description E Side of Ditch From Proposed Location

### SAMPLING DATA

Collection Method Stainless Steel Hand Auger  
Depth (0-1) (5-12 3/4) Moisture Content Moist  
Color LIGHT BROWN TO MUD BROWN MOTTLED Odor -  
Description CLAY, STIFF, w/ORGANICS (ROOTS) CGL

### Analyses Required

### Container Description

Priority Pollutant Metals & Barium (6010 & 7471)	From Lab <u>X</u> or G&M <u>-</u>
VOCs (8260)	1 x 4 oz
SVOCs (8270)	1 x 4 oz
Cyanide (9010)	1 x 4 oz
Full TCLP	2 x 8 oz Jk
Sample Monitoring (TIP, OVA, HNU, etc.)	

Remarks Mixed Non VOC's composted in stainless steel bowl with stainless steel spoon

Soil At Surface

Sampler(s) J. Hughes/David Page



## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 8 of 15

Site Location Gloss Industries, Birmingham, AL Location Name SB-09 1/6/98 24-SL0009

Sample I.D. No. 970610 -LD- 24 -SL 0009 (0-1) (157) Coded/Replicate No. -

Date 6/18/97 Time of Sampling: Begin 1010 End -

Weather Overcast 80's

Site Description E Side of Ditch From Proposed Location

### SAMPLING DATA

Collection Method Stainless Steel Hand Auger

Depth 5/2 5/16 (0-1) 5/2 3/4 Moisture Content Moist

Color Light Brown & Med Brown Mottled Odor -

Description CLAY, STIFF, w/ORGANICS (ROOTS) (CL)

### Analyses Required

### Container Description

Priority Pollutant Metals & Barium (6010 & 7471)	From Lab <u>X</u> or G&M <u>-</u>
	1 x 4 oz
VOCs (8260)	1 x <u>4</u> oz
SVOCs (8270)	1 x <u>4</u> oz
Cyanide (9010)	1 x <u>4</u> oz
Full TCLP <del>for</del>	<del>2 x 8 oz for</del>

Sample Monitoring (TIP, OVA, HNU, etc.) -

Remarks Non-VOC's <sup>Mixed</sup> Compositd in stainless steel bowl with stainless steel spoon

Cont At Surface

Sampler(s) J. Hughes/David Page

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 9 of 15

Site Location Gloss Industries, Birmingham, AL Location Name SB-10 1/6/98 24-SL0010

Sample I.D. No. 970618-LD-24-SL0010 (0-1) (KT) Coded/Replicate No. —

Date 6/18/97 Time of Sampling: Begin 1010 End —

Weather OVERCAST 80's

Site Description E SIDE OF DITCH FROM PROPOSED LOCATION

### SAMPLING DATA

Collection Method Stainless Steel Hand Auger

Depth (5' to 2' 2") (0-1) Moisture Content —

Color DARK BROWN & LIGHT BROWN (CLAY) Odor —

Description CLAY, PLASTIC, BROWN SOIL (SILT SAND) (CH)

### Analyses Required

### Container Description

<p>Priority Pollutant Metals &amp; Barium (6010 &amp; 7471)</p> <p>VOCs (8260)</p> <p>SVOCs (8270)</p> <p>Cyanide (9010)</p> <p>Full TCLP</p> <p>Sample Monitoring (TIP, OVA, HNU, etc.)</p>	<p>From Lab <u>X</u> or G&amp;M <u>—</u></p> <p><u>1 x 4 oz</u></p> <p><u>1 x 4 oz</u></p> <p><u>1 x 4 oz</u></p> <p><u>1 x 4 oz</u></p> <p><u>2 x 8 oz</u> <u>JD</u></p>
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Remarks Non-VOC's Mixed Composited in stainless steel bowl with stainless steel spoon

SPEC AT GERMANY

Sampler(s)

J. Hughes/David Page

# SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 10 of 15  
 Site Location Sloss Industries, Birmingham, AL Location Name SB-11 11/6/98 24-SL0011  
 Sample I.D. No. 970618-LD-2A-SL0011 (0-1) (B) Coded/Replicate No. SPLIT W/ GUARDIAN  
970618-LD-2A-SL0011  
 Date 6/18/97 Time of Sampling: Begin 1115 End   
 Weather SUNNY TO OVERCAST, W. WIND, 0-5 mph, 80's  
 Site Description S. SIDE OF ROAD AS PROPOSED

## SAMPLING DATA

Collection Method Stainless Steel Hand Auger  
 Depth 542516 (0-1) 542319 Moisture Content DRY  
 Color LIGHT BROWN & MOD BROWN MOTTLED Odor -  
 Description CLAY, VERY STIFF (CL)

## Analyses Required

## Container Description

Priority Pollutant Metals & Barium (6010 & 7471)	From Lab <u>X</u> or G&M <u></u>
VOCs (8260)	1 x 4 oz
SVOCs (8270)	1 x 4 oz
Cyanide (9010)	1 x 4 oz
<del>FTT TCLP</del>	<del>2 x 8 oz</del> <u>1H</u>
Sample Monitoring (TIP, OVA, HNU, etc.)	

Remarks Non VOC's Mixed Composited in stainless steel bowl with stainless steel spoon

SOIL LOCATED UNDER 10" OF FINE DUST

Sampler(s) J. Hughes/David Page

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 11 of 15  
Site Location Sloss Industries, Birmingham, AL Location Name SB-12 24-SL0012  
Sample I.D. No. 970618-LD-24-SL0012 (0-1) (K7) Coded/Replicate No. —  
Date 6/18/97 Time of Sampling: Begin 1145 End —  
Weather Overcast 80's  
Site Description S. SIDE OF ROAD AS PROPOSED ADJACENT TO FLEVE PILE

### SAMPLING DATA

Collection Method Stainless Steel Hand Auger  
Depth (0-1) (5425/6) - (5423/d) Moisture Content DRY  
Color Light Brown & Mud Brown Mottled Odor —  
Description CLAY, VERY STIFF (CL)

### Analyses Required

### Container Description

Priority Pollutant Metals & Barium (6010 & 7471)	From Lab <u>X</u> or G&M <u>—</u> <u>1 x 4 oz</u>
VOCs (8260)	<u>1 x 4 oz</u>
SVOCs (8270)	<u>1 x 4 oz</u>
Cyanide (9010)	<u>1 x 4 oz</u>
<del>Full TELP</del>	<u>2 x 8 oz</u> <u>614</u>
Sample Monitoring (TIP, OVA, HNU, etc.)	

Remarks Non VOC's MIXED Composited in stainless steel bowl with stainless steel spoon

SOIL UNDER 2FT OF FLEVE DIRT

Sampler(s) J. Hughes/David Page

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 12 of 15  
Site Location Sloss Industries, Birmingham, AL Location Name SB 15 24-SL0013  
Sample I.D. No. 9706 18 -LD- 24 -SL0013 (0-1') EP Coded/Replicate No. 1/6/88  
Date 6/18/97 Time of Sampling: Begin 1540 End   
Weather SUNNY, 80's, HUMID  
Site Description DOWN HILL TO WEST OF P-28: EDGE OF LIME PILE

### SAMPLING DATA

Collection Method Stainless Steel Hand Auger  
Depth (0-1) Moisture Content MOIST  
Color MODERATELY (SYN) G/L Odor -  
Description CLAY, STIFF (CL)

### Analyses Required

### Container Description

Priority Pollutant Metals & Barium (6010 & 7471)	From Lab <u>X</u> or G&M <u></u>
	<u>1 x 4 oz</u>
VOCs (8260)	<u>1 x 4 oz</u>
SVOCs (8270)	<u>1 x 4 oz</u>
Cyanide (9010)	<u>1 x 8 oz</u>
Full TCLP	<u>2 x 8 oz</u>
Sample Monitoring (TIP, OVA, HNU, etc.)	

Remarks MIXED  
Non-VOC's Compositied in stainless steel bowl with stainless steel spoon  
Spill at Surface

Sampler(s) J. Hughes/David Page



## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 13 of 15  
Site Location Sloss Industries, Birmingham, AL Location Name SB-14 24-SL0014  
Sample I.D. No. 970618 -LD-24 -SL0014 (0-1) (KT) Coded/Replicate No. —  
Date 6/18/97 Time of Sampling: Begin 1520 End —  
Weather SUNNY  
Site Description JUST WEST OF EDGE OF LIME MOUNDS

### SAMPLING DATA

Collection Method Stainless Steel Hand Auger  
Depth (0-1) Moisture Content Moist  
Color PALE YELLOWISH BROWN (10 YR 6/2) Odor —  
Description CLAY, W/ SOME SAND, & ROOTS (CL)

### Analyses Required

### Container Description

Priority Pollutant Metals & Barium (6010 & 7471)	From Lab <u>X</u> or G&M <u>—</u> 1 x 4 oz
VOCs (8260)	1 x <u>4</u> oz
SVOCs (8270)	1 x <u>4</u> oz
Cyanide (9010)	1 x <u>4</u> oz
Full TCLP	<u>2</u> x 8 oz <u>del</u>
Sample Monitoring (TIP, OVA, HNU, etc.)	

Remarks Mixed Non-VOC's Composted in stainless steel bowl with stainless steel spoon  
SMC AT SURFACE

Sampler(s) J. Hughes/David Page

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 14 of 15  
Site Location Gloss Industries, Birmingham, AL Location Name SB 15 24-SL0015  
Sample I.D. No. 970618-LD-2A-SL0015 1014 EP Coded/Replicate No. —  
Date 6/18/97 Time of Sampling: Begin 14:5 End —  
Weather Sunny 80's S Wind  
Site Description S.SIDE OF ROAD, 150 FT NORTHER PROPOSED LOCATION

### SAMPLING DATA

Collection Method Stainless Steel Hand Auger  
Depth (0-1) (0.214) (5.222) Moisture Content Dry  
Color GRAYISH ORANGE & DUSKY BROWN MOTTLED Odor —  
Description CLAY, STIFF (CL)

### Analyses Required

Priority Pollutant Metals & Barium (6010 & 7471)  
VOCs (8260)  
SVOCs (8270)  
Cyanide (9010)  
~~Full TCLP~~  
Sample Monitoring (TIP, OVA, HNU, etc.)

### Container Description

From Lab X or G&M —  
1 x 4 oz  
1 x 4 oz  
1 x 4 oz  
1 x 4 oz  
2 x 8 oz PH

Remarks Mixed Non VOC's Composted in stainless steel bowl with stainless steel spoon  
Soil AT Surface

Sampler(s) J. Hughes/David Page

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 15 of 15  
Site Location Gloss Industries, Birmingham, AL Location Name K+ 1/6/98 SB-15 24-SL0016  
Sample I.D. No. 970616 -LD- 24 -SL0016 (0-1) Coded/Replicate No. —  
Date 6/18/97 Time of Sampling: Begin 13:15 End —  
Weather SUNNY, 80's, humid  
Site Description E SIDE OF ROAD APPROX 100' FROM Y IN ROAD

### SAMPLING DATA

Collection Method Stainless Steel Hand Auger  
Depth (0-1) Moisture Content MOIST  
Color MOD BROWN 5YR 3/4 Odor —  
Description SOIL, SAND + CLAY (CL - SC)

### Analyses Required

### Container Description

Priority Pollutant Metals & Barium (6010 & 7471)	From Lab <u>X</u> or-G&M <u>—</u>
VOCs (8260)	1 x 4 oz
SVOCs (8270)	1 x 4 oz
Cyanide (9010)	1 x 4 oz
<del>Full TCLP</del>	<del>2 x 8 oz</del>
Sample Monitoring (TIP, OVA, HNU, etc.)	

Remarks Mixed Non-VOC's composited in stainless steel bowl with stainless steel spoon

SOIL AT SURFACE

Sampler(s) J. Hughes/David Page



**VOLUME I**  
**APPENDIX A.2**  
**SLUDGE SAMPLING**

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 1 of 4  
Site Location Gloss Industries, Birmingham, AL Location Name 23-Smoo1 ~~SM-01~~ 1/6/98  
Sample I.D. No. 970619-LD-23-SMOO1 ~~10-11~~ Coded/Replicate No. 970619-LD-23-SMOO1  
+ SPLIT W/ GUARDIAN ~~(NOS)~~  
Date 6/19/97 Time of Sampling: Begin  End   
Weather SUNNY, 90's HUMID  
Site Description NE QUADRANT OF SUMU23

### SAMPLING DATA

Collection Method Stainless Steel Spoon  
Depth NA Moisture Content WET  
Color BLACK (N1) & MOD BROWN (54RQ(4)) MOTTLED Odor SEPTIC  
Description SLUDGE

### Analyses Required

### Container Description

	From Lab <u>X</u> or G&M <u></u>
Priority Pollutant Metals & Barium (6010 & 7471)	1 x 4 oz
VOCs (8260)	1 x <u>4</u> oz
SVOCs (8270)	1 x <u>4</u> oz
Cyanide (9010)	1 x <u>4</u> oz
Full TCLP	2 x <u>8 oz</u> <u>12</u>
Sample Monitoring (TIP, OVA, HNU, etc.)	

Remarks ~~Non-VOC's~~ <sup>MIXED</sup> Composit~~ed~~ in stainless steel bowl with stainless steel spoon

SPLIT W/ GUARDIAN collected.

Sampler(s) J. Hughes/David Page

## SOIL/SEDIMENT SAMPLING LOG

Project No. TFQ320.015 Page 2 of 4  
Site Location Sloss Industries, Birmingham, AL Location Name 23- SMOOZ (K) 116198  
Sample I.D. No. 970619-LD-23-SMOOZ (K) (0-1') Coded/Replicate No. -  
Date 6/19/97 Time of Sampling: Begin 1530 End -  
Weather SUNNY, 90's HUMID  
Site Description SE QUADRANT OF SMOOZ

### SAMPLING DATA

Collection Method Stainless Steel Spoon  
Depth NA Moisture Content SATURATED  
Color BLACK (NI) Odor SEPTIC  
Description MUDGY

### Analyses Required

### Container Description

	From Lab <u>X</u> or G&M
Priority Pollutant Metals & Barium (6010 & 7471)	1 x 4 oz
VOCs (8260)	1 x 4 oz
SVOCs (8270)	1 x 4 oz
Cyanide (9010)	1 x 4 oz
Full TCLP	2 x 8 oz <u>1 LITON</u>
Sample Monitoring (TIP, OVA, HNU, etc.)	

Remarks Non-VOC's ~~Composited~~ MIXED in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes/David Page

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 3 of 4  
Site Location Gloss Industries, Birmingham, AL Location Name ~~SH-09~~ 23-SM003  
Sample I.D. No. 970619 -LD- 24-SM003 (0-1') Coded/Replicate No. 1/6/98  
Date 6/19/97 Time of Sampling: Begin 1555 End \_\_\_\_\_  
Weather Sunny 90's  
Site Description NW QUADRANT OF SUMW 22

### SAMPLING DATA

Collection Method Stainless Steel Spoon  
Depth NA Moisture Content SATURATED  
Color Mud Brown (5YR 3/4) Odor SEPTIC  
Description SLUDGE

### Analyses Required

Priority Pollutant Metals & Barium (6010 & 7471)

VOCs (8260)

SVOCs (8270)

Cyanide (9010)

Full TCLP

Sample Monitoring (TIP, OVA, HNU, etc.)

### Container Description

From Lab X or G&M \_\_\_\_\_

1 x 4 oz

1 x 4 oz

1 x 4 oz

1 x 4 oz

1 x 8 oz (11702) 2 x 4 oz (VOCs)

Remarks Non VOC's. ~~Composited~~ in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes/David Page



## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 4 of 4  
Site Location Gloss Industries, Birmingham, AL Location Name ~~SM-04~~ 23-Sm0004  
Sample I.D. No. 970619-LD-23-SM0004 (Q-1) Coded/Replicate No. —  
Date 6/19/97 Time of Sampling: Begin 1605 End —  
Weather SUNNY SO'S  
Site Description SW QUADRANT OF SMMW 23

### SAMPLING DATA

Collection Method Stainless Steel Spoon  
Depth NA Moisture Content SATURATED  
Color BLACK (NI) Odor SEPC-C  
Description MUDGE

### Analyses Required

### Container Description

Priority Pollutant Metals & Barium (6010 & 7471)	From Lab <u>X</u> or G&M <u>—</u> 1 x 4 oz
VOCs (8260)	1 x <u>4</u> oz
SVOCs (8270)	1 x <u>4</u> oz
Cyanide (9010)	1 x <u>4</u> oz
Full TCLP	2 x <u>4</u> oz (VOC's) + 1 x 1 LITER (TOM)
Sample Monitoring (TIP, OVA, HNU, etc.)	

Remarks Non VOC's <sup>NIYER</sup> Compositied in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes/David Page

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 1 of 4  
Site Location Gloss Industries, Birmingham, AL Location Name KT 1/6/98 SH-OT 24-SM0001  
Sample I.D. No. 970619-LD-24-SM0001 Coded/Replicate No. 970619-LD-24-SM9001  
Date 6/19/97 Time of Sampling: Begin 1050 End \_\_\_\_\_  
Weather Sunny, 90's  
Site Description NW QUADRANT OF SMMW2d

### SAMPLING DATA

Collection Method Stainless Steel Spoon  
Depth NA Moisture Content Dry  
Color DUSKY BROWN (5YR 2/2) Odor —  
Description FINE DUST

### Analyses Required

### Container Description

Priority Pollutant Metals & Barium (6010 & 7471)	From Lab <u>X</u> or G&M _____ 1 x 4 oz
VOCs (8260)	1 x <u>4</u> oz
SVOCs (8270)	1 x <u>4</u> oz
Cyanide (9010)	1 x <u>8</u> oz
Full TCLP	2 x <u>8-oz-luten</u>
Sample Monitoring (TIP, OVA, HNU, etc.)	

Remarks Non-VOC's Mixed Composited in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes/David Page



## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 2 of 4  
Site Location Gloss Industries, Birmingham, AL Location Name KT 1/6/98 SM-02 24-SM0002  
Sample I.D. No. 970619-LD-24-SM0002 (0-1) (KT) Coded/Replicate No. —  
Date 6/19/97 Time of Sampling: Begin 1120 End —  
Weather Sunny So's  
Site Description SW QUADRANT of SUMMIZD

### SAMPLING DATA

Collection Method Stainless Steel Spoon  
Depth NA Moisture Content DRY  
Color Dark Brown (542212) Odor —  
Description FINE DUST

### Analyses Required

Priority Pollutant Metals & Barium (6010 & 7471)  
VOCs (8260)  
SVOCs (8270)  
Cyanide (9010)  
Full TCLP  
Sample Monitoring (TIP, OVA, HNU, etc.) —

### Container Description

From Lab X or G&M —  
1 x 4 oz  
1 x 4 oz  
1 x 4 oz  
1 x 4 oz  
2 x 8 oz 1 liter

Remarks Non VOC's Mixed composited in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes/David Page

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 3 of 4  
Site Location Gloss Industries, Birmingham, AL Location Name 24-SM0003 (K1) 1/6/98  
Sample I.D. No. 970619-LD-2A-SM0003 (01) (K1) Coded/Replicate No. —  
Date 6/19/97 Time of Sampling: Begin 1145 End —  
Weather SUNNY 90'S  
Site Description SE QUADRANT OF YARD 24

### SAMPLING DATA

Collection Method Stainless Steel Spoon  
Depth NA Moisture Content DRY  
Color DUSKY BROWN (SYR 212) Odor —  
Description PLUG DUST

### Analyses Required

### Container Description

Priority Pollutant Metals & Barium (6010 & 7471)	From Lab <u>X</u> or G&M <u>—</u> 1 x 4 oz
VOCs (8260)	1 x <u>4</u> oz
SVOCs (8270)	1 x <u>4</u> oz
Cyanide (9010)	1 x <u>4</u> oz
Full TCLP	2 x <u>8-oz 1 LITER</u>
Sample Monitoring (TIP, OVA, HNU, etc.)	

Remarks MIXED  
Non-VOC's composited in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes/David Page



## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 4 of 4  
Site Location Sloss Industries, Birmingham, AL Location Name 24-SM0004 (R) 11/198  
Sample I.D. No. 970619-LD-21-SM0004 (R) 11/198 Coded/Replicate No. \_\_\_\_\_  
Date 6/19/97 Time of Sampling: Begin 1235 End \_\_\_\_\_  
Weather SUNNY - overcast 90's  
Site Description NE QUADRANT OF YWU 29

### SAMPLING DATA

Collection Method Stainless Steel Spoon  
Depth NA Moisture Content Moist  
Color DUSKY BROWN (54K2(2)) Odor -  
Description FINE DUST

### Analyses Required

### Container Description

Priority Pollutant Metals & Barium (6010 & 7471)	From Lab <u>X</u> or G&M _____ 1 x 4 oz
VOCs (8260)	1 x <u>4</u> oz
SVOCs (8270)	1 x <u>4</u> oz
Cyanide (9010)	1 x <u>4</u> oz
Full TCLP	2 x <u>8 oz / 1 liter</u>
Sample Monitoring (TIP, OVA, HNU, etc.)	

Remarks MIXED  
Non VOC's composited in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes/David Page

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015  
Site Location Sloss Industries, Birmingham, AL Location Name ~~SM-01~~ 39-SM0001  
Sample I.D. No. 970616-LD-39-SM0001 ~~(B-1)~~ Coded/Replicate No.  
Date 6/16/97 Time of Sampling: Begin 1620 End  
Weather SUNNY → OVERCAST, 80's, SWIND  
Site Description SEND OF SWMU 39 FROM BOTTOM 1/3 OF PILE

### SAMPLING DATA

Collection Method Stainless Steel Spoon  
Depth NA Moisture Content MOIST  
Color very dusky red 10% 2/2 Odor —  
Description Fine grained material w/ some medium grained material  
"iron" like particles present.

### Analyses Required

### Container Description

Priority Pollutant Metals & Barium (6010 & 7471)

From Lab ~~NOT ANALYZED BY LAB~~ or G&M

1 x 4 oz

VOCs (8260)

1 x 4 oz

SVOCs (8270)

1 x 4 oz

Cyanide (9010)

1 x 4 oz

Full TCLP

2 x 8 oz / L

Sample Monitoring (TIP, OVA, HNU, etc.)

Remarks ~~Non-VOC's~~ <sup>Mixed</sup> Composites in stainless steel bowl with stainless steel spoon

EB:FB COLLECTED w/ SUPERIOR BRAND SODIUM FREE DISTILLED H<sub>2</sub>O LOT # DNOV 997

Sampler(s) J. Hughes/David Page

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 2 of 6  
Site Location Gloss Industries, Birmingham, AL Location Name 39-SM0002 SM-02 (K) 1/6/98  
Sample I.D. No. 9706 16-LD-39-SM 0002 (0-21) Coded/Replicate No. —  
Date 6/16/97 Time of Sampling: Begin 1025 End —  
Weather SUNNY, 70's, LIGHT WIND FROM SOUTH  
Site Description WEST SIDE OF SWMW 39, ± 1/2 WAY UP PILE, ± 1/3 WAY UP FROM S  
END OF SWMW 39

### SAMPLING DATA

Collection Method Stainless Steel Spoon  
Depth NA Moisture Content Dry  
Color VERY DARK RED 102 2/2 Odor —  
Description FLUE DUST

### Analyses Required

Priority Pollutant Metals & Barium (6010 & 7471)

VOCs (8260)

SVOCs (8270)

Cyanide (9010)

Full TCLP

Sample Monitoring (TIP, OVA, HNU, etc.)

### Container Description

From Lab X or G&M —

1 x 4 oz

1 x 4 oz

1 x 4 oz

1 x 4 oz

2 x 8 oz

1 LITON

Remarks Non VOC's MIXED Composited in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes/David Page

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 3 of 6  
Site Location Sloss Industries, Birmingham, AL Location Name ED 11-118 39-SM0003 SM-03 970616-LD-39-SM9001  
Sample I.D. No. 970616-LD-39-SM0003 Coded/Replicate No. 10-IT  
Date 6/16/97 Time of Sampling: Begin 1700 End   
Weather OVERCAST 80's, SWIND  
Site Description E SIDE OF SWIMW 39 ABOUT 3/4 WAY UP FROM SOUTHERN END

### SAMPLING DATA

Collection Method Stainless Steel Spoon  
Depth NA Moisture Content DRY  
Color very dusty red (10 & 2 1/2) Odor -  
Description Fine to medium grained material, hard, w/ some silver colored particles in it

### Analyses Required

### Container Description

Priority Pollutant Metals & Barium (6010 & 7471)	From Lab <u>X</u> or G&M <u></u>
VOCs (8260)	1 x 4 oz
SVOCs (8270)	1 x 4 oz
Cyanide (9010)	1 x 4 oz
Full TCLP	2 x 8 oz / L
Sample Monitoring (TIP, OVA, HNU, etc.)	

Remarks Mixed Non-VOC's Compositied in stainless steel bowl with stainless steel spoon

INDICATE OF 39 CONTACTED

Sampler(s) J. Hughes/David Page

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 4 of 6  
Site Location Sloss Industries, Birmingham, AL Location Name SM-01 39-SM0004 RP 1/6/98  
Sample I.D. No. 970616 -LD- 39 -SM0004 1011 EP Coded/Replicate No. —  
Date 6/16/97 Time of Sampling: Begin 800 End —  
Weather OVERCAST, 70's, NO WIND  
Site Description N END OF SUMP 39, COLLECTED ± 1/3 UP FROM BOTTOM OF  
Pit

### SAMPLING DATA

Collection Method Stainless Steel Spoon  
Depth NA Moisture Content DRY  
Color VERY DARK RED (10 YR 2/2) Odor —  
Description FINE TO MED. GRAINED, MED HARD,

### Analyses Required

### Container Description

Priority Pollutant Metals & Barium (6010 & 7471)	From Lab <u>X</u> or G&M <u>—</u>
VOCs (8260)	1 x 4 oz
SVOCs (8270)	1 x 4 oz
Cyanide (9010)	1 x 4 oz
Full TCLP	2 x 4 oz 1 liter
Sample Monitoring (TIP, OVA, HNU, etc.)	

*NOT ANALYZED BY LAB SEE 12/19/97*

Remarks MIXED  
Non VOC's Composted in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes/David Page



## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 5 of 6

Site Location Sloss Industries, Birmingham, AL Location Name ~~SM-05~~ 39-SM0005 ET 1/6/98

Sample I.D. No. 970619-LD-39-SM0005 (1011) Coded/Replicate No. \_\_\_\_\_

Date 6/19/97 Time of Sampling: Begin 1740 End \_\_\_\_\_

Weather SUNNY

Site Description APPROXIMATELY 1/3 OF WAY FROM NEND OF SSWW 39. ON WEST SIDE  
OF SSWW 39. ± 5 FT UP BANK FROM ROAD CUT IN FOR PIPELINE

### SAMPLING DATA

Collection Method Stainless Steel Spoon

Depth NA Moisture Content DRY

Color VERY DARK RED (LOVE 212) Odor -

Description FLOEYEST

### Analyses Required

### Container Description

	From Lab <u>X</u> or G&M _____
Priority Pollutant Metals & Barium (6010 & 7471)	1 x 4 oz
VOCs (8260)	1 x 8 oz
SVOCs (8270)	1 x 8 oz
Cyanide (9010)	1 x 8 oz
Full TCLP	2 x 8 oz

Sample Monitoring (TIP, OVA, HNU, etc.) \_\_\_\_\_

Remarks MIXED  
Non-VOC's COMPOSITED in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes/David Page

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 6 of 6  
Site Location SISS INDUSTRIES, BIRMINGHAM, AL LOCATION NAME: 34- SM 0006 (C) 11/6/98  
Sample I.D. No. 970619-LO-39-SM0006 Coded/Replicate No. —  
Date 6/19/97 Time of Sampling: Begin 1735 End —  
Weather SUNNY 80's  
Site Description APPROX. 1/3 LENGTH OF SWTH 39 NDC ACCESS ROAD AT HW-3453D  
HEADING DOWN ACCESS ROAD, ON WEST SIDE OF PILE APPROX 5 TO 10  
FT UP BANK

### SAMPLING DATA

Collection Method STAINLESS STEEL SPOON  
Depth NA Moisture Content DET  
Color VERY DUSKY RED (10 R 2/2) Odor —  
Description FINE DUST

### Analyses Required

### Container Description

	From Lab <u>x</u>	or G&M
PRIORITY POLLUTANT METALS ? BARIUM (6010 ? 7471)	1 x 4 oz GLASS	
VOCs (8260)	1 x 8 oz GLASS	
SVOCs (8270)	1 x 8 oz GLASS	
CYANIDE (9010)	1 x 8 oz GLASS	
FULL TCLP	2 x 8 oz GLASS	

Sample Monitoring (TIP, OVA, HNU, etc.) —

Remarks NON VOC'S MIXED IN STAINLESS STEEL BOWL W/ STAINLESS STEEL SPOON

Sampler(s) J. HUGHERS / D. PAGE

**VOLUME I**  
**APPENDIX A.3**  
**SUBSURFACE SOIL SAMPLING**





## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 1 of 2  
Site Location Gloss Industries, Birmingham, AL Location Name: MW-21  
Sample I.D. No. 970806 -LD- 23 -SL 0021 (14-16) Coded/Replicate No. —  
Date 8/6/97 Time of Sampling: Begin 1445 End —  
Weather SUNNY 80's  
Site Description AT MW-21, JUST BELOW STEEP CHANG E IN SWP

### SAMPLING DATA

Collection Method Split spoon  
Depth 14-16 Moisture Content Moist  
Color LIGHT BROWN (5YR 6/4) Odor —  
Description CLAY, slightly plastic (CL)

### Analyses Required

### Container Description

Priority Pollutant Metals & Barium (6010 & 7471)

From Lab X or G&M —

1 x 4 oz

VOCs (8260)

1 x 8 oz

SVOCs (8270)

1 x 8 oz

Cyanide (9010)

1 x 8 oz

Sample Monitoring (TIP, OVA, HNU, etc.) —

SYM-N7

marks Non VOC's Compositied in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 2 of 2  
Site Location Sloss Industries, Birmingham, AL Location Name: MW-21  
Sample I.D. No. 970806 -LD-23 -SL 0021 (20-22) Coded/Replicate No. 970806-LD-23-SL9021  
Date 8/6/97 Time of Sampling: Begin 1430 End \_\_\_\_\_  
Weather SUNNY, 80's  
Site Description AT MW-21, JUST BELOW STEEP CHANGE IN SLOPE

### SAMPLING DATA

Collection Method Split spoon  
Depth 20-22 Moisture Content moist  
Color light brown (5YR 5/6) Odor —  
Description CLAY, STIFF, w/ some laminations like original bedding(?) (CL)

### Analyses Required

### Container Description

Priority Pollutant Metals & Barium (6010 & 7471)

From Lab X or G&M \_\_\_\_\_

1 x 4 oz

VOCs (8260)

1 x 8 oz

SVOCs (8270)

1 x 8 oz

Cyanide (9010)

1 x 8 oz

Sample Monitoring (TIP, OVA, HNU, etc.) \_\_\_\_\_

BVH-ND

Remarks Non VOC's Composited in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 1 of 1  
Site Location Gloss Industries, Birmingham, AL Location Name: 23-58 MW-22 (Ref) 1/6/92  
Sample I.D. No. 970806 -LD-23 -SL0022 (0-2) Coded/Replicate No. -  
Date 8/6/97 Time of Sampling: Begin 740 End -  
Weather SUNNY High 70's to Low 80's  
Site Description AT MW-22

### SAMPLING DATA

Collection Method Split spoon  
Depth 0-2 Moisture Content DRY  
or DUSKY BROWN (5YR 2 1/2) + LIGHT BROWN (5YR 5 1/6) Odor -  
Description CLAY w/ CHERT & SANDSTONE (CL)

### Analyses Required

### Container Description

	From Lab <u>X</u> or G&M
<u>Priority Pollutant Metals &amp; Barium (6010 &amp; 7471)</u>	<u>1 x 4 oz</u>
<u>VOCs (8260)</u>	<u>1 x 8 oz</u>
<u>SVOCs (8270)</u>	<u>1 x 8 oz</u>
<u>Cyanide (9010)</u>	<u>1 x 8 oz</u>
Sample Monitoring (TIP, OVA, HNU, etc.)	
<u>Q/M - NO</u>	

marks Non VOC's Compositied in stainless steel bowl with stainless steel spoon

5/2/6/2 SANDSTONE PRESENT AT 2 FT BS

Sampler(s) J. Hughes

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 1 of 2  
Site Location Sloss Industries, Birmingham, AL Location Name 23-SBHW23 (R) 1/6/98  
Sample I.D. No. 9708 23-LD-23-SL 0023 (12-14) Coded/Replicate No. —  
Date 8/6/97 Time of Sampling: Begin 930 End —  
Weather Sunny 80's  
Site Description At 02W-23

### SAMPLING DATA

Collection Method Split spoon  
Depth 12-14 Moisture Content Dry  
Color LIGHT BROWN (5YR 5/6) w/ very pale orange (10YR 8/2) Odor —  
Description Clay stuff (cl)

### Analyses Required

Priority Pollutant Metals & Barium (6010 & 7471)  
VOCs (8260)  
SVOCs (8270)  
Cyanide (9010)  
Sample Monitoring (TIP, OVA, HNU, etc.) —

### Container Description

From Lab X or G&M —  
1 x 4 oz  
1 x 8 oz  
1 x 8 oz  
1 x 8 oz

Remarks Non VOC's Compositied in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes



## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 2 of 2  
Site Location Gloss Industries, Birmingham, AL Location Name: 23-5B 0W23 (K) 1/6/98  
Sample I.D. No. 970808 -LD- 23 -SL 0023 (24-26) Coded/Replicate No. —  
Date 8/6/97 Time of Sampling: Begin 1020 End —  
Weather Sunny & B's  
Site Description At MW-23

### SAMPLING DATA

Collection Method Split spoon  
Depth 24-26 Moisture Content moist to dry  
54266a 54262L  
or light brown w/ thick brown laminations Odor —  
Description CLAY, plastic to stiff, has layered look like original bedrock  
(CL-CL)

### Analyses Required

### Container Description

Analyses Required	From Lab	X	or G&M
Priority Pollutant Metals & Barium (6010 & 7471)	1	x	4 oz
VOCs (8260)	1	x	8 oz
SVOCs (8270)	1	x	8 oz
Cyanide (9010)	1	x	8 oz
Sample Monitoring (TIP, OVA, HNU, etc.)			

marks Non VOC's Compositated in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015

Page 1 of 2

Site Location Gloss Industries, Birmingham, AL

Location Name: 23-58 MW 24 11/12/97 11/16/98

Sample I.D. No. 970805 -LD- 23 -SL 0024 (7-9) (6-8)

Coded/Replicate No. 970805 -LD- 23 -SL 0024 (7-9) MS/MSD

Date 8/05/97

Time of Sampling: Begin 15:5 End

Weather Cloud 80's

Site Description Atc MW-24

### SAMPLING DATA

Collection Method Split spoon

Depth 7-8 Moisture Content moist

Color top brown silt/clay w/ light brown silt/clay Odor -

Description CLAY, STIFF, w/ CLAY FRAGMENTS (CL)

### Analyses Required

### Container Description

	From Lab <u>X</u> or G&M <u></u>
<u>Priority Pollutant Metals &amp; Barium (6010 &amp; 7471)</u>	<u>1 x 4 oz</u>
<u>VOCs (8260)</u>	<u>1 x 8 oz</u>
<u>SVOCs (8270)</u>	<u>1 x 8 oz</u>
<u>Cyanide (9010)</u>	<u>1 x 8 oz</u>
Sample Monitoring (TIP, OVA, HNU, etc.) <u></u>	<u></u>

Remarks Non VOC's Compositd in stainless steel bowl with stainless steel spoon

5/14/10 119

Sampler(s) J. Hughes



## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 2 of 2  
Site Location Gloss Industries, Birmingham, AL Location Name: 23-56 MW 24 (RT) 1/6/98  
Sample I.D. No. 9708 05 -LD-23 -SL 00 2A (14-16) Coded/Replicate No. -  
Date 8/5/97 Time of Sampling: Begin 1530 End   
Weather Sunny 80's  
Site Description AT MW-24

### SAMPLING DATA

Collection Method Split spoon  
Depth 14-16 Moisture Content moist  
or light brown silty Odor -  
Description CLAY, ST. GR, w/ ~~small~~ CLAY FRAGMENTS (CL)

### Analyses Required

### Container Description

	From Lab <u>X</u> or G&M <u></u>
<u>Priority Pollutant Metals &amp; Barium (6010 &amp; 7471)</u>	<u>1 x 4 oz</u>
<u>VOCs (8260)</u>	<u>1 x 8 oz</u>
<u>SVOCs (8270)</u>	<u>1 x 8 oz</u>
<u>Cyanide (9010)</u>	<u>1 x 8 oz</u>
<u>Sample Monitoring (TIP, OVA, HNU, etc.)</u>	

marks Non VOC's Compositied in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 1 of 1  
Site Location Gloss Industries, Birmingham, AL Location Name: 23-SRW-25 (K1) 1/6/98  
Sample I.D. No. 970805-LD-23-SL-0025 (19-21) Coded/Replicate No. \_\_\_\_\_  
Date 8/5/97 Time of Sampling: Begin 1345 End \_\_\_\_\_  
Weather Sunny 80's  
Site Description ATRW-25 15 FT EAST OF CENTER OF WELL PAIR

### SAMPLING DATA

Collection Method Split spoon  
Depth 19-21 Moisture Content DM  
Color Pale olive (10Y6/2) w/ (10Y2.5/4) no yellowish brown mottling Odor —  
Description CLAY (cl)

### Analyses Required

### Container Description

	From Lab <u>X</u> or G&M _____
<u>Priority Pollutant Metals &amp; Barium (6010 &amp; 7471)</u>	<u>1 x 4 oz</u>
<u>VOCs (8260)</u>	<u>1 x 8 oz</u>
<u>SVOCs (8270)</u>	<u>1 x 8 oz</u>
<u>Cyanide (9010)</u>	<u>1 x 8 oz</u>
Sample Monitoring (TIP, OVA, HNU, etc.)	

Remarks Non VOC's Composited in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes





## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 1 of 2  
Site Location Sloss Industries, Birmingham, AL Location Name: 38-5B RW 26 EB 1/6/98  
Sample I.D. No. 970804 -LD-38 -SL0026(10-12) Coded/Replicate No. 970804-LD-38-SL0026  
Date 8/04/97 Time of Sampling: Begin 1540 End   
Weather Sunny So's  
Site Description AT RW-26

### SAMPLING DATA

Collection Method Split spoon  
Depth 10-12 Moisture Content 22.4  
'or Mod yellowish brown (10-12.5 in) - mod brown silt/cl + light brown & gray (5-12.6 in) Odor   
Description CLAY, silty (cu)

### Analyses Required

### Container Description

	From Lab	X	or G&M
<u>Priority Pollutant Metals &amp; Barium (6010 &amp; 7471)</u>	<u>1</u>	<u>x</u>	<u>4 oz</u>
<u>VOCs (8260)</u>	<u>1</u>	<u>x</u>	<u>8 oz</u>
<u>SVOCs (8270)</u>	<u>1</u>	<u>x</u>	<u>8 oz</u>
<u>Cyanide (9010)</u>	<u>1</u>	<u>x</u>	<u>8 oz</u>
<u>Sample Monitoring (TIP, OVA, HNU, etc.)</u>			

marks Non VOC's Compositd in stainless steel bowl with stainless steel spoon

10/15/15/18

Sampler(s) J. Hughes

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 2 of 2  
Site Location Gloss Industries, Birmingham, AL Location Name: 38-SB MW 26 11/6/98  
Sample I.D. No. 970804 -LD- 38 -SL 0026 (18-20) Coded/Replicate No. 16.5  
Date 8/04/97 Time of Sampling: Begin 14:5 End   
Weather Sunny 90's  
Site Description AT MW-26

### SAMPLING DATA

Collection Method Split spoon  
Depth 18-20 Moisture Content dry  
Color Mod Yellowish Brown (10YR 5/4) + Dusky Brown (5YR 2/2) Odor None  
Description CLAY, STIFF, w/ some calcite f.l.s (FINE GR RECRYSTALLIZED)  
FRAGMENTS (CL)

### Analyses Required

### Container Description

	From Lab <u>X</u> or G&M <u></u>
<u>Priority Pollutant Metals &amp; Barium (6010 &amp; 7471)</u>	<u>1 x 4 oz</u>
<u>VOCs (8260)</u>	<u>1 x 8 oz</u>
<u>SVOCs (8270)</u>	<u>1 x 8 oz</u>
<u>Cyanide (9010)</u>	<u>1 x 8 oz</u>
<u>Sample Monitoring (TIP, OVA, HNU, etc.)</u>	<u></u>

Remarks Non VOC's Composited in stainless steel bowl with stainless steel spoon

43/32 / 27/20

Sampler(s) J. Hughes



## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 1 of 2  
Site Location Gloss Industries, Birmingham, AL Location Name 38-SB MW 27 (K) 11/2/96  
Sample I.D. No. 9708 05 -LD- 3B -SL00 27 (11-13) Coded/Replicate No. -  
Date 8/ 5 /97 Time of Sampling: Begin 800 End -  
Weather SUNNY 20's  
Site Description At MW-27

### SAMPLING DATA

Collection Method Split spoon  
Depth 11-13 Moisture Content Moist → DRY  
or Light brown (5/2 5/16) w/ DUSKY RED (5/2 3/4) MOTTLING Odor -  
Description CLAY, w/ IRON CONCRETIONS, PLASTIC TO STIFF (CL)

### Analyses Required

### Container Description

	From Lab <u>X</u> or G&M <u>-</u>
<u>Priority Pollutant Metals &amp; Barium (6010 &amp; 7471)</u>	<u>1 x 4 oz</u>
<u>VOCs (8260)</u>	<u>1 x 8 oz</u>
<u>SVOCs (8270)</u>	<u>1 x 8 oz</u>
<u>Cyanide (9010)</u>	<u>1 x 8 oz</u>
<u>Sample Monitoring (TIP, OVA, HNU, etc.)</u>	

marks Non VOC's Compositd in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 1 of 2  
Site Location Sloss Industries, Birmingham, AL Location Name: 38-SB HWS-27 (K) 1/6/88  
Sample I.D. No. 9708 05 -LD-38 -SL 0027 (22-24) Coded/Replicate No. -  
Date 8/5/97 Time of Sampling: Begin 8.5 End -  
Weather SUNNY 70's  
Site Description AT HWS-27

### SAMPLING DATA

Collection Method Split spoon  
Depth 22-24 Moisture Content MOIST TO SATURATED  
Color PALE YELLOWISH BROWN (10 YR 6/2) Odor -  
Description CLAY, plastic, w/ limestone fragments (CU)  
SATURATED AT BOTTOM OF SPOON

### Analyses Required

### Container Description

	From Lab <u>X</u> or G&M <u>-</u>
<u>Priority Pollutant Metals &amp; Barium (6010 &amp; 7471)</u>	<u>1 x 4 oz</u>
<u>VOCs (8260)</u>	<u>1 x 8 oz</u>
<u>SVOCs (8270)</u>	<u>1 x 8 oz</u>
<u>Cyanide (9010)</u>	<u>1 x 8 oz</u>
<u>Sample Monitoring (TIP, OVA, HNU, etc.)</u>	

Remarks Non VOC's Composited in stainless steel bowl with stainless steel spoon

1/46/97 18" RELOCATED

Sampler(s) J. Hughes

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 1 of 2  
Site Location Gloss Industries, Birmingham, AL Location Name 38-38W28 (R) 11/6/98  
Sample I.D. No. 970807 -LD-38 -SL 0028 (8-10) Coded/Replicate No. 970807-LD-38-SL0028(8-10) MS/MSD  
Date 8/7/97 Time of Sampling: Begin 1400 End \_\_\_\_\_  
Weather Sunny 80's  
Site Description At MW-28 15 FT South of Well

### SAMPLING DATA

Collection Method Split spoon  
Depth 8-10 Moisture Content Moist  
for 1042714) 542516 542212  
GRAY, SLT ORANGE w/ LIGHT BROWN & DUSKY BROWN MOTTLING Odor —  
Description CLAY, silt, (CL)

### Analyses Required

### Container Description

	From Lab <u>X</u> or G&M _____
<u>Priority Pollutant Metals &amp; Barium (6010 &amp; 7471)</u>	<u>1 x 4 oz</u>
<u>VOCs (8260)</u>	<u>1 x 8 oz</u>
<u>SVOCs (8270)</u>	<u>1 x 8 oz</u>
<u>Cyanide (9010)</u>	<u>1 x 8 oz</u>
Sample Monitoring (TIP, OVA, HNU, etc.) _____	
<u>QVM - N9</u>	

Marks Non VOC's Compositied in stainless steel bowl with stainless steel spoon

6/6/98 10/10/12/14

Sampler(s) J. Hughes

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 2 of 2  
Site Location Gloss Industries, Birmingham, AL Location Name 38-58 MW-28 RA 1/6/98  
Sample I.D. No. 970802-LD-38-SL 0028 (13-15) Coded/Replicate No. —  
Date 8/7/97 Time of Sampling: Begin 1625 End —  
Weather Sunny 80's  
Site Description At MW-28 5 ft South of well

### SAMPLING DATA

Collection Method Split spoon  
Depth 13-15 Moisture Content Moist  
(54YB11) 54B516 5412314  
Color Light Greenish Gray, light brown, & brown mottled Odor —  
Description CLAY, Plastic to stiff (CL-CH)

### Analyses Required

### Container Description

From Lab X or G&M —

Priority Pollutant Metals & Barium (6010 & 7471)

1 x 4 oz

VOCs (8260)

1 x 8 oz

SVOCs (8270)

1 x 8 oz

Cyanide (9010)

1 x 8 oz

Sample Monitoring (TIP, OVA, HNU, etc.)

OM - NO

Remarks Non VOC's Compositied in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes



## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 1 of 1  
Site Location Gloss Industries, Birmingham, AL Location Name 38-SB MW 29 (K) 1/6/98  
Sample I.D. No. 970807-LD-38-SL 0029 (15-17) Coded/Replicate No. -  
Date 8/7/97 Time of Sampling: Begin 1220 End -  
Weather SUNNY 80's  
Site Description 1/2 WAY BETWEEN MW-30 & MW-28 ON SIDE ACCESS ROAD NEXT TO FENCE

### SAMPLING DATA

Collection Method Split spoon  
Depth 15-17 Moisture Content moist  
or light brown (5425/6) Odor -  
Description CLAY, shell (cc)

### Analyses Required

### Container Description

	From Lab <u>X</u> or G&M
<u>Priority Pollutant Metals &amp; Barium (6010 &amp; 7471)</u>	<u>1 x 4 oz</u>
<u>VOCs (8260)</u>	<u>1 x 8 oz</u>
<u>SVOCs (8270)</u>	<u>1 x 8 oz</u>
<u>Cyanide (9010)</u>	<u>1 x 8 oz</u>
<u>Sample Monitoring (TIP, OVA, HNU, etc.)</u>	
<u>ENV - NG</u>	

marks Non VOC's Compositied in stainless steel bowl with stainless steel spoon

ENV - NG 11/12/14/15  
Sampler(s) J. Hughes

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 2 of 2

Site Location Sloss Industries, Birmingham, AL Location Name: 38-SB MW 29 (R) 1/6/98

Sample I.D. No. 9708 02 -LD- 38 -SL 0029 (19-21) Coded/Replicate No. —

Date 8/7/97 Time of Sampling: Begin 1230 End —

Weather Sunny 80's

Site Description 1/2 WAY BETWEEN MW-30 & MW-28 ON SIDE ACCESS ROAD NEXT TO FENCE

### SAMPLING DATA

Collection Method Split spoon

Depth 19-21 Moisture Content Moist

Color light brown (SY 25/6) w/ some med brown mottling (SY 24/4) Odor —

Description CLAY, silty (CL)

### Analyses Required

### Container Description

Priority Pollutant Metals & Barium (6010 & 7471)

From Lab X or G&M —

1 x 4 oz

VOCs (8260)

1 x 8 oz

SVOCs (8270)

1 x 8 oz

Cyanide (9010)

1 x 8 oz

Sample Monitoring (TIP, OVA, HNU, etc.) —

OVN-ND

Remarks Non VOC's Composited in stainless steel bowl with stainless steel spoon

4/7/97

Sampler(s) J. Hughes





## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015

Page 1 of 2

Site Location Sloss Industries, Birmingham, AL

Location Name: 38-SB MW-30 SLD

Sample I.D. No. 970807-LD-38-SL 0030 (9-11)

Coded/Replicate No. —

Date 8/2/97

Time of Sampling: Begin 9:15 End —

Weather —

Site Description AT MW-30 SLD ± 5 FT E of P.A.R.

### SAMPLING DATA

Collection Method Split spoon

Depth 8-11

Moisture Content DRY

or LIGHT BROWN S 1/2 SLT

Odor —

Description CLAY, STIFF (CL)

### Analyses Required

### Container Description

From Lab X or G&M

Priority Pollutant Metals & Barium (6010 & 7471)

1 x 4 oz

VOCs (8260)

1 x 8 oz

SVOCs (8270)

1 x 8 oz

Cyanide (9010)

1 x 8 oz

Sample Monitoring (TIP, OVA, HNU, etc.)

DVH-ND

Remarks Non VOC's Compositated in stainless steel bowl with stainless steel spoon

10/6/01

Sampler(s) J. Hughes

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 2 of 2

Site Location Gloss Industries, Birmingham, AL Location Name 3E-5B MW-30 S&D

Sample I.D. No. 970807 -LD- 38 -SL 0030 (18-19) Coded/Replicate No. 14

Date 8/7/97 Time of Sampling: Begin 1000 End

Weather SUNNY 80'S

Site Description AC MW-30 ± 5 FT EAST OF PAIR

### SAMPLING DATA

Collection Method Split spoon

Depth 18-20 ft 17-19 Moisture Content Moist

Color LIGHT BROWN 542516 Odor —

Description CLAY, STIFF (CL)

### Analyses Required

### Container Description

	From Lab <u>X</u> or G&M <u></u>
<u>Priority Pollutant Metals &amp; Barium (6010 &amp; 7471)</u>	<u>1 x 4 oz</u>
<u>VOCs (8260)</u>	<u>1 x 8 oz</u>
<u>SVOCs (8270)</u>	<u>1 x 8 oz</u>
<u>Cyanide (9010)</u>	<u>1 x 8 oz</u>
Sample Monitoring (TIP, OVA, HNU, etc.)	

OVN - NO

Remarks Non VOC's Composited in stainless steel bowl with stainless steel spoon

9/4/97

Sampler(s) J. Hughes



## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015

Page 1 of 1

Site Location Gloss Industries, Birmingham, AL

Location Name: 39-SB RW-32 (K1) 1/6/99

Sample I.D. No. 970805-LD-39-SL0032 (20-22)

Coded/Replicate No. 970805-LD-39-SL0032

Date 8/5/97

Time of Sampling: Begin \_\_\_\_\_ End \_\_\_\_\_

Weather Sunny 80's

Site Description AT RW-32

### SAMPLING DATA

Collection Method Split spoon

Depth \_\_\_\_\_

Moisture Content \_\_\_\_\_

\_\_\_\_\_

Odor \_\_\_\_\_

Description \_\_\_\_\_

*No SAMPLE COLLECTED  
ONLY NON-NATIVE MATERIALS  
PRESENT*

### Analyses Required

### Container Description

From Lab X or G&M \_\_\_\_\_

Priority Pollutant Metals & Barium (6010 & 7471)

1 x 4 oz

VOCs (8260)

1 x 8 oz

SVOCs (8270)

1 x 8 oz

Cyanide (9010)

1 x 8 oz

Sample Monitoring (TIP, OVA, HNU, etc.) \_\_\_\_\_

*No SAMPLE COLLECTED*

arks Non VOC's Composited in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 1 of 1

Site Location Gloss Industries, Birmingham, AL Location Name: MW-33

Sample I.D. No. 970800 -LD-39 -SL 0033 (11-13) Coded/Replicate No. \_\_\_\_\_

Date 8/8/97 Time of Sampling: Begin 1525 End \_\_\_\_\_

Weather Overcast, 70's, Drizzle to med rain

Site Description 1/2 WAY BETWEEN MW-32 & MW-34 ON WEST SIDE OF ROAD ON EAST SIDE OF S.W. 39.

### SAMPLING DATA

Collection Method Split spoon

Depth 11-13 Moisture Content 24%

Color Light brown & pale olive Odor —

Description CLAY, STIFF, w/ROUNDED PEBBLES. (CL)

### Analyses Required

Priority Pollutant Metals & Barium (6010 & 7471)

VOCs (8260)

SVOCs (8270)

Cyanide (9010)

Sample Monitoring (TIP, OVA, HNU, etc.) \_\_\_\_\_

ON -ND

### Container Description

From Lab X or G&M \_\_\_\_\_

1 x 4 oz

1 x 8 oz

1 x 8 oz

1 x 8 oz

Remarks Non VOC's Composited in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes



## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 1 of 1  
Site Location Gloss Industries, Birmingham, AL Location Name: 39-58 rw-34 (R+) 1/6/98  
Sample I.D. No. 970805 -LD- 39 -SL 0034(10-12) Coded/Replicate No. —  
Date 8/5/97 Time of Sampling: Begin 1200 End —  
Weather Cloudy 80's  
Site Description At rw-34 ± 5 ft N of rw-34 D

### SAMPLING DATA

Collection Method Split spoon  
Depth 10-12 Moisture Content Moist  
Color olive gray 5/3/2 Odor —  
Description CLAY, STIFF w/ some L.S. FRAGMENTS (CL.)

### Analyses Required

### Container Description

	From Lab <u>X</u> or G&M <u>—</u>
<u>Priority Pollutant Metals &amp; Barium (6010 &amp; 7471)</u>	<u>1 x 4 oz</u>
<u>VOCs (8260)</u>	<u>1 x 8 oz</u>
<u>SVOCs (8270)</u>	<u>1 x 8 oz</u>
<u>Cyanide (9010)</u>	<u>1 x 8 oz</u>
<u>Sample Monitoring (TIP, OVA, HNU, etc.)</u>	

Remarks Non VOC's Compositing in stainless steel bowl with stainless steel spoon

21-19/11

Sampler(s) J. Hughes

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 1 of 1

Site Location Sloss Industries, Birmingham, AL Location Name: MW-35

Sample I.D. No. 970808 -LD-38 -SL0035(10-12) Coded/Replicate No. MW-35

Date 8/8/97 Time of Sampling: Begin 1240 End

Weather OVERCAST 70'S OCCASIONAL

Site Description At MW-35 PROPOSED LOCATION APPROX 1/2 WAY DOWN ALLEN ROAD  
FROM MW-3540

### SAMPLING DATA

Collection Method Split spoon

Depth 10-12 Moisture Content SUGAR MOIST

Color GRAYISH ORANGE 104274 542516 LIGHT BROWN MOTTLED Odor

Description CLAY STIFF (CL)

### Analyses Required

### Container Description

Analyses Required	From Lab	X	or G&M
<u>Priority Pollutant Metals &amp; Barium (6010 &amp; 7471)</u>	<u>1</u>	<u>x</u>	<u>4 oz</u>
<u>VOCs (8260)</u>	<u>1</u>	<u>x</u>	<u>8 oz</u>
<u>SVOCs (8270)</u>	<u>1</u>	<u>x</u>	<u>8 oz</u>
<u>Cyanide (9010)</u>	<u>1</u>	<u>x</u>	<u>8 oz</u>
<u>Sample Monitoring (TIP, OVA, HNU, etc.)</u>			

Remarks Non VOC's Composited in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes



## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 1 of 2  
Site Location Gloss Industries, Birmingham, AL Location Name: Flow 36 39-SB MW 36  
Sample I.D. No. 970804 -LD- 38 -SL0036 (5-7) Coded/Replicate No. 970804-LD-38-SL0036 MW  
Date 8/04/97 Time of Sampling: Begin 1400 End   
Weather Sunny 90's  
Site Description AT MW-36

### SAMPLING DATA

Collection Method Split spoon:  
Depth 5-7 Moisture Content Moist  
for Mod Brown (54244) w/ <sup>Vent</sup> MSLY det 6 1/2 (2/2) Odor -  
Description CLAY, plastic, w/ small rocks (CH)

### Analyses Required

### Container Description

	From Lab <u>X</u> or G&M
<u>Priority Pollutant Metals &amp; Barium (6010 &amp; 7471)</u>	<u>1 x 4 oz</u>
<u>VOCs (8260)</u>	<u>1 x 8 oz</u>
<u>SVOCs (8270)</u>	<u>1 x 8 oz</u>
<u>Cyanide (9010)</u>	<u>1 x 8 oz</u>

Sample Monitoring (TIP, OVA, HNU, etc.)

marks Non VOC's Compositied in stainless steel bowl with stainless steel spoon

3/6/8/9

Sampler(s) J. Hughes



## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 1 of 2  
Site Location Sloss Industries, Birmingham, AL Location Name: 39-SB Mw-36 (KT) 1/6/98  
Sample I.D. No. 9708 od -LD-38 -SL0036(10-12) Coded/Replicate No. -  
Date 8/04/97 Time of Sampling: Begin 1430 End -  
Weather Sunny 90's  
Site Description Mw-36

### SAMPLING DATA

Collection Method Split spoon  
Depth 10-12 Moisture Content Moist  
Color Moist brown (5YR 4/9) Odor -  
Description Clay, plastic (CH)

### Analyses Required

### Container Description

From Lab X or G&M -

Priority Pollutant Metals & Barium (6010 & 7471)

1 x 4 oz

VOCs (8260)

1 x 8 oz

SVOCs (8270)

1 x 8 oz

Cyanide (9010)

1 x 8 oz

Sample Monitoring (TIP, OVA, HNU, etc.) -

Remarks Non VOC's Composited in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes



## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 1 of 7  
Site Location Gloss Industries, Birmingham, AL Location Name: FW-32  
Sample I.D. No. 970808 -LD-38 -SL0037 (4-6) Coded/Replicate No. SPLIT w/ GUARDIAN  
Date 8/08/97 Time of Sampling: Begin: 1100 End:   
Weather OVERCAST 70's OCCASIONAL LIGHT RAIN  
Site Description At SEE END OF SUMM 38

### SAMPLING DATA

Collection Method Split spoon  
Depth 4-6 Moisture Content moist  
Color LIGHT BROWN w/ PINK OILY MATTLING Odor —  
Description CLAY, STIFF (CL)

### Analyses Required

Priority Pollutant Metals & Barium (6010 & 7471)  
VOCs (8260)  
SVOCs (8270)  
Cyanide (9010)  
Sample Monitoring (TIP, OVA, HNU, etc.)  
GM-ND

### Container Description

From Lab X or G&M   
1 x 4 oz 1x4oz  
1 x 8 oz  
1 x 8 oz  
1 x 8 oz  
} 1 LITER GLASS } FOR GUARDIAN

Remarks Non VOC's Compositied in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015

Page 2 of 2

Site Location Gloss Industries, Birmingham, AL

Location Name: HW-32

Sample I.D. No. 970808 -LD- -SL0032 (B-10)

Coded/Replicate No. \_\_\_\_\_

Date 8/8/97

Time of Sampling: Begin 1040 End \_\_\_\_\_

Weather Overcast 70's w/occasional light rain

Site Description At SE end of SWW 38

### SAMPLING DATA

Collection Method Split spoon

Depth B-10

Moisture Content moist

Color 10 yr old GRAYISH ORANGE w/PALE ORANGE; 104662 542516 w/42 brown mottling

Odor —

Description CLAY, STIFF (CL)

### Analyses Required

Priority Pollutant Metals & Barium (6010 & 7471)

VOCs (8260)

SVOCs (8270)

Cyanide (9010)

Sample Monitoring (TIP, OVA, HNU, etc.)

### Container Description

From Lab X or G&M \_\_\_\_\_

1 x 4 oz

1 x 8 oz

1 x 8 oz

1 x 8 oz

Remarks Non VOC's Composited in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes

**VOLUME I**

**APPENDIX A.4**

**MONITOR WELL SAMPLE/CORE LOGS**

# SAMPLE/CORE LOG

Boring/Well WP-21 Project/No. Gloss Industries / TF0320.015 Page 1 of 2

Site Location Birmingham, AL Drilling Started 8/6/97 Drilling Completed 8/6/97

Total Depth Drilled 29 feet Hole Diameter 6 inches Type of Sample/ Coring Device SPLIT SPOON

Length and Diameter of Coring Device 2' x 2" Sampling Interval CONTINUOUS feet

Land-Surface Elev. 556.58 feet ☒ Surveyed ☐ Estimated Datum FT AMSL

Drilling Fluid Used NONE Drilling Method HSA

Drilling Contractor Graves Service Company, Inc. Driller RON Helper JOHN DWIGHT

Prepared By Joe Hughes Hammer Weight 140 Hammer Drop 30 inches

Sample/Core Depth  
(feet below land surface)  
From To  
Core Recovery  
(feet)  
Time/Hydraulic  
Pressure or  
Blows per 6  
inches

Sample/Core Description

0	2	1.0	3/12/97	CLAY, mod yellowish-brown w/ light brown mottling (10YR5/4), stiff, dry, no odor (CL)	ND
2	4	0.25	3/13/97	NO RECOVERY <del>CLAY</del> AS 0-2 (CL)	ND
4	6	2.0	3/13/97	CLAY, mod brown w/ abundant sand (5YR4/4), moist, plastic, no odor (CH)	ND
6	8	2.0	2/9/27/10	CLAY AS ABOVE, w/ SANDSTONE FRAGMENTS (DARK YELLOWISH-BROWN (10YR4/2)), v. gr gr & s gr sand, moist, no odor (CH)	
8	10	2.0	6/12/16/97	LIME ON TOP OF SPOON ALL ABOVE 8 IS MISTAKENLY FINE CLAY, light brown (5YR5/6) w/ some light brown 5YR6/4, stiff, no odor (CL)	
10	12	2.0	8/6/9/12	CLAY AS 8 TO 10 (CL)	
12	14	2.0	9/10/11/12	CLAY AS 8 TO 10 (CL)	

### SAMPLE/CORE LOG (Cont.d)

Boring/Well MW-21

Page 2 of 2

Prepared By Joe Hughes

[illegible]

## SAMPLE/CORE LOG



## SAMPLE/CORE LOG

Boring/Well P-31 Project/No. TF0320013 SLOSS INDUSTRIES Page 1 of 1

Site Location BIRMINGHAM ALABAMA Drilling Started 7-18-95 1200 Drilling Completed 7-18-95 1200

Total Depth Drilled ~2.0 feet      Hole Diameter 7 1/4" inches      Type of Sample/  
Coring Device Split Spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 625.70 feet ☒ Surveyed ☐ Estimated Datum msl

Drilling Fluid Used None Drilling Method Hollow Stem Auger

Drilling Contractor GRAVES SERVICES Co. Driller Ron Helper Hal

Prepared By J. KIRKPATRICK Hammer Weight 146 Hammer Drop 36 inches

Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 Inches
From	To		

### Sample/Core Description

0	2	50%	<p>SANDSTONE, white, fine to medium grained, weathered (friable), poorly cemented, becomes hard at 2 ft bks..</p> <p>(made 3 attempts to penetrate rock. Augered through 2 ft of highly weathered S.S - then had spoon refusal on one attempt. - Couldn't penetrate rock on other two attempts.)</p> <p><i>Asadul Patwari</i> 7-10-95</p>
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(15) 12/19/97

2/19/97

**SAMPLE/CORE LOG**

Boring/Well FW-22 34 Project/No. TF0320-013 Page 1 of 2

Site Location SWSS, BIRMINGHAM, ALABAMA Drilling Started 7/19/95 Drilling Completed 7/20/95

Total Depth Drilled 119 feet Hole Diameter 6 1/8 inches Type of Sample/ Coring Device           

Length and Diameter of Coring Device            Sampling Interval            feet

Land-Surface Elev. 625.70 feet ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used APPROX. 150 GAL H<sub>2</sub>O Drilling Method A.C. ROTARY

Drilling Contractor GRAVES Driller JAN M. Helper J.B./D.W. GAT P.

Prepared By J. HUGHES Hammer            Hammer            Weight            Drop            inches

Sample/Core Depth (feet below land surface) Core Recovery (feet) Time/Hydraulic Pressure or Blows per 6 inches

Sample/Core Description

From	To	Core Recovery (feet)	Sample/Core Description
0	8.5	AIR ROTARY 6" H <sub>2</sub> O	SAND STONE, LIGHT BROWN (SYR 6/4), HARD-SET, W/HEMATITE CMT & CHERT FRAGMENTS (TO 2 FT - Fm?), WEATHERED AT SURFACE
			WELL ROUNDED <del>ITE</del> SAND, MODERATE SORTING, DRY, v. gr
8.5	9		CLAY, LIGHT BROWN (SYR 6/4), DRY
9	13.5		SANDSTONE AS 0-8.5, HARD
13.5	22.75		CLAY (SANDY), LIGHT BROWN (SYR 6/4) W/TRACE SANDSTONE AT 14.0 - 16
22.75	28.5		SANDSTONE STRINGERS, LIGHT BROWN (SYR 6/4), HARD, v. gr, HEMATITE CMT, IN CLAY MATRIX, LIGHT BROWN (SYR 6/4), HARD, DRY
28.5	36		SHALE (CLAYEY), LIGHT GRAY (N7), NON FISSILE, SLIGHTLY DAMP, SOME LIGHT BROWN (SYR 6/4) SHALE/CLAY & LIGHT BROWNISH GRAY SHALE CLAY (SYR 6/1)
			S.S. STRINGER AT 34.75-35
36	72		SHALE/CLAY, MEDIUM GRAY (N5), HARD, SLIGHTLY FISSILE, SLIGHTLY MOIST
			SOFT SPOT 52.5-52.75
72	72.5		BLACK SILT (LIKE COAL)
72.5	76	AIR ROTARY	SHALE, AS 36-72
		6'	



# SAMPLE/CORE LOG

Boring/Well R31 Project/No. TF032-013 Page 7 of 2

Site Location SEAS-BIRMINGHAM, ALABAMA Drilling Started 7/17/95 Drilling Completed 7/12/95

Total Depth Drilled 119 feet Hole Diameter 2 1/8 inches Type of Sample/ Coring Device —

Length and Diameter of Coring Device — Sampling Interval — feet

Land-Surface Elev. 625.70 feet ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used APPROX 150 GAL H<sub>2</sub>O Drilling Method AIR ROTARY

Drilling Contractor GRAVES Driller J. HAM Helper B. DAUGHTER

Prepared By J. Hughes Hammer Weight — Hammer Drop — inches

Sample/Core Depth (feet below land surface) From To Core Recovery (feet) Time/Hydraulic Pressure or Blows per 6 inches

Sample/Core Description

76	83	AIR ROTARY	CLAY (SHALE, LIGHT BROWN (5YR 6/4), HARD, DRY
83	102	6"	SANDSTONE, MODERATE BROWN (5YR 4/4), VF-FGR
			QZ SAND, MOD ROUNDED & SORTED, HEMATITE CEMENT
			W/CLAY AS 76-83, DRY
			SIFT SPOT 86.75 - 88.25
102	109.5		SILTSTONE TO SANDSTONE, MODERATE BROWN (5YR 4/4)
			≤ VF-FGR QZ SAND, MODERATE ROUNDED & SORTED,
			HEMATITE CEMENT, W/MINOR LIMESTONE W/COARSE
			CALCITE FILLING BRIDGES/CASTS & INTRACLASTS.
109.5	109.5		LIMESTONE, MEDIUM GRAY (N5), HARD W/FRACTURES (107-108)
			W/CALCITE FILLED VEINS & SOME SILTSTONE SANDSTONE (FALLIN)
109.5	112		CLAY, SOFT, W/HARD STRINGER AT 111.5
113	114.5		SHALE/CLAY, MED GRAY (N5), NON FISSILE
114.5	119	AIR ROTARY	LIMESTONE, MEDIUM GRAY (N5), W/CALCITE FILLED
		6"	VEINS/FRACTURES, HARD, FRACTURED IN SPTS (?)
			CRINOID (50.5-)
			FOSSILS: BRANCHING BRIDGES; CRINOID STEM
			* AFTER DRILLING TO 119 FTBS : LETTING BORE HOLE
			SET FOR 15 MIN DTW = ± 108 FTBS
			POSSIBLE WATER BEARING ZONES AT 107-109 & 114.5-119
			SCREENED TO 100.5 SAND TO 106.5

JH 12/17/92  
0001 RP

**SAMPLE/CORE LOG**

Boring/Well P-30 Project/No. TE0820013 LOSS INDUSTRIES Page 1 of 2

Site Location BIRMINGHAM ALABAMA Drilling Started 7-18-95 1515 Drilling Completed 7-17-95 0930

Total Depth Drilled 38 feet Hole Diameter 7 1/4 inches Type of Sample/ Coring Device Split spoon pk 7-18-95

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 632.94 feet (K) 2/6/96 ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used None Drilling Method Hollow Stem Auger

Drilling Contractor GRAVES SERVICE CO. Driller Ron Helper Hal

Prepared By J. KIRKPATRICK Hammer Weight 140 Hammer Drop 30 inches

Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description	
From	To				
0	2	24"	12/13/14/15	CLAY, mottled mod. reddish brown (10 R 4/6) and pale yellowish orange (10 YR 8/6); stiff, dry, no odor (CH)	0.0
2	4	18"	12/21/19/18	CLAY, pale yellowish orange (10 YR 8/6) w/ mod. reddish brown streaks, dry, stiff, no odor. (CH)	0.0
4	6	22"	16/21/22/25	CLAY, w/silt, pale yellowish orange (10 YR 8/6) w/ mod. reddish lenses, dry to damp, hard but breaks apart. Some highly weathered S.S. (fine grain), no odor (ML)	0.0
6	8	22"	28/30/28/24	CLAY, silty, pale yellowish orange (10 YR 8/6), hard but crumbles easily, dry, no odor. (ML) or (CL)	0.0
8	10	24"	4/4/5/7	CLAY, silty, pale yellowish orange (10 YR 8/6) w/ mod. reddish brown (10 R 4/6) streaks, medium stiff, crumbles easily, damp, no odor (ML) or (CL)	0.0
10	12	22"	6/10/12/14	CLAY, some silt, "marbled appearance" - pale yellow orange and light gray (N7), medium stiff, cohesive, damp, no odor. (CL)	0.0
12	14	20"	10/18/17/25	CLAY, pale yellowish orange (10 YR 8/6) and thin mod. reddish orange streaks. looks like weathered lime	0.0

OVM

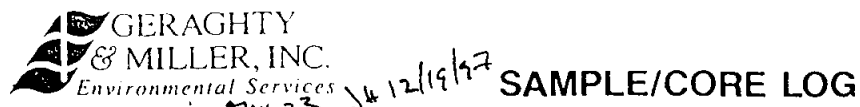
**SAMPLE/CORE LOG (Cont.d)**

Boring/Well MW-23 P-30 24 12/19/92

Page 2 of 2

Prepared By J. KIRKPATRICK

Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description	OVM
				stone (but the <del>note</del> color's wrong), medium stiff to stiff, damp to dry, no odor (CL)	
14	16	24"	5/6/12/10	CLAY, silty, pale yellowish orange & light gray color, stiff, dry, no odor. (CL)	0.0
16	18	11"	4/14/21/28	CLAY, as above. (CL)	0.0
18	20	24"	8/18/25/22	CLAY, silty <del>and</del> <sup>and</sup> fine sand, pale yellowish orange (10 YR 6/6) w/ black (M) streaks (3" zone in middle) stiff, damp to dry, no odor. (CL)	0.0
20	22	0"	13/26/27/25	No recovery - lost shoe on spoon.	NA
22	24	24"	2/8/10/10	CLAY, dark yellowish orange (10 YR 6/6) w/ light brown (5 YR 5/6) streaks, thinly bedded, (vertically), med. stiff, damp, no odor (OH)	0.0
24	26	22"	8/10/11/12	CLAY, pale yellow <sup>(10 YR 8/6)</sup> orange and dark yellow orange <sup>(10 YR 6/6)</sup> thinly bedded (vertical), medium stiff, damp no odor. (OH).	0.0
26	28	18"	4/19/50/5"	CLAY, shades of yellowish and reddish orange, some bedding (vertical), <sup>med.</sup> stiff to hard, damp to dry, no odor (OH)	0.0
28	30	9"	21/50/3"	CLAY, mod. reddish brown (10 R 4/6), some very pale orange (10 YR 8/2), some bedding, (vertical) very stiff to hard, dry, no odor. (OH)	0.0
				SPoon REFUSAL - 27.0 and 28.5.	



Boring/Well A-30 Project/No. TF0320013 SCSS INDUSTRIES Page 1 of 1

ite  
Location BIRMINGHAM ALABAMA Drilling Started 7-27-95 0800 Drilling Completed 7-27-95 1045

Total Depth Drilled 79.0 feet      Hole Diameter 6" inches      Type of Sample/  
Coring Device None

Length and Diameter of Coring Device 2' x 2" Sampling Interval None feet

Land-Surface Elev. 632.94 feet <sup>(KT) 316116</sup> ☒ Surveyed ☐ Estimated Datum msl

Drilling Fluid Used AIR Drilling Method AIR ROTARY

Drilling Contractor GRAVES SERVICE CO. Driller DWIGHT PRUITT Helper J. DUTLER

Prepared By J. KIRKPATRICK Hammer Weight NA Hammer Drop NA inches

Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches
From	To		

**Sample/Core Description**

0	30			SEE LITHOLOGY LOG FOR HSA O.B. DRILLING.
				Reddish brown clay and weathered shale.
30	38	AIR ROTARY 6" Roller Cone		CLAY (possibly highly weathered shale), mod. reddish brown (10 R 4/6), dry. Easy drilling
38	53			CLAY or SHALE (highly weathered), <sup>some</sup> evidence of thin bedding, medium gray (N5), dry to damp. Smooth drilling
53	55			CLAY or SHALE, (highly weathered), <del>pat</del> grayish orange (10 YR 7/4), bit is cutting smoothly
55	57			SANDSTONE, weathered, light brown (5 YR 5/6) well rounded, hard, medium to fine grained.
57	79			SHALE (or CLAY), medium gray (N5), weathered smooth drilling but hit an occasional hard spot (2' thick) throughout formation. Hard spots are SANDSTONE, fine grained, medium gray, hard and SHALE, hard, medium gray. Making water at ~76 ft
		79 - TOTAL	DEPTH	bls. (~1 gpm or better)
				<i>Franklin</i> 7-27-85

**SAMPLE/CORE LOG**

Boring/Well P-29 Project/No. FE0320013 SLOSS INDUSTRIES Page 1 of 2

Site Location BIRMINGHAM ALABAMA Drilling Started 7-18-95 0815 Drilling Completed 7-18-95 1000

Total Depth Drilled 20 feet Hole Diameter 7 1/4 inches Type of Sample/ Coring Device Split Spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 591.88 feet 2/6/96 ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used None Drilling Method Hollow Stem Auger

Drilling Contractor GRAVES SERVICE CO. Driller Ron Helper Hal

Prepared By J. KIRKPATRICK Hammer Weight 140 Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) Core Recovery (feet) Time/Hydraulic Pressure or Blows per 6 inches

Sample/Core Description

OVM

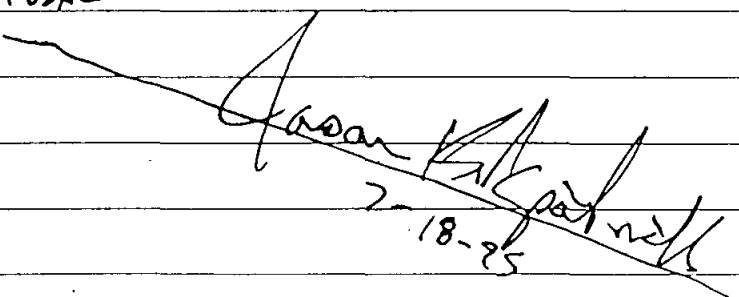
0	Z	20"	12/14/91	CLAY, moderate reddish orange (10 R 6%) w/ pale yellowish orange (10 YR 6%) blebs, very stiff (cohesive), dry to damp, chert fragments (broken) throughout spoon, no odor (CL)	0.0
Z	4	22"	12/18/36/46	CLAY w/ broken chert, clay is moderate reddish orange (10 R 6%) yellowish orange (10 YR 6%) blebs, very stiff, chert fragments throughout spoon and bottom 3" is all broken chert (crumbled), spoon is dry to damp, no odor (CH)	0.0
4	6	24"	18/7/9/10	CLAY, color as above, more clay less chert but still has chert throughout, damp to dry, very stiff, no odor. (CL)	0.0
6	8	22"	11/10/11/11	CLAY, mod. reddish orange (10 R 6%) w/ yellowish blebs & black (w) streaks, chert rubble throughout, very stiff, damp to dry, no odor (CL)	0.0
8	10	24"	7/10/11/11	CLAY, mod. reddish orange (10 R 6%) w/ 4" lense of mottled orange and light greenish gray (5GY 8%), orange clay has chert frag., grayish lense is clean clay, layered (like shale), entire	0.0

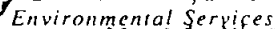
**SAMPLE/CORE LOG (Cont.d)**

Boring/Well rw-24 P-27 11/12/19/97

Page 2 of 2

Prepared By J. KIRKPATRICK

Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description	OVM
From	To				
10	12	24"	<del>missed</del> 4/5/6/15	spoon is very stiff, damp, no odor. (CL) CLAY, mod. reddish orange (10 R 6/6), w/ chert fragments, very stiff, damp, no odor (CL)	0.0
12	14	24"	4/5/6/15	CLAY, mod. reddish orange (10 R 6/6) w/ light greenish gray (5 GY 8/1) lenses, bedded (weathered) very stiff, <del>some</del> trace chert fragments, soft wet zone (2") in middle, damp, no odor (CL)	0.0
14	16	20"	10/23/25/33	CLAY, mod. reddish orange (10 R 6/6), hard, looks like weathered (highly) rock, bedded (vertical) dry to damp, no odor (CL)?	0.0
16	18	8"	25/30/50/50	CLAY, mod. reddish orange (10 R 6/6) w/ dark gray (N3) lenses (thin), appears bedded (vertical) (like a weathered rock), hard, dry, no odor	0.0
18	20	4"	50/4"	CLAY, as above, appears to be weathered rock (shale)	0.0
				SPOON REFUSAL - 18.0	
				NO AUGER REFUSAL -	
					



mental Services  
NW-24 JH 12/19/97

P-25

BIRMINGHAM ALABAMA

76.0

### Length and Diameter

Land-Surface Elev. 612.88 feet

Drilling Fluid Used

Drilling Contractor

Prepared  
By \_\_\_\_\_

Sample/Core Depth  
(feet below land surface)

Core  
Recovery  
(feet)Time/Hydraulic  
Pressure or  
Blows per 6  
Inches

### Sample/Core Description

\*

James K. Spaulding  
7-25-95

SAMPLE/CORE LOG

Boring/Well P-2875 Project/No. TF0320013 LOSS INDUSTRIES Page 1 of 1

Site Location BIRMINGHAM ALABAMA Drilling Started 7-13-95 0810 Drilling Completed 7-13-95 1045

Total Depth Drilled 20.0 feet Hole Diameter 7 1/4" inches Type of Sample/  
Coring Device Split Spoon (Steel)

Length and Diameter of Coring Device 2' x 2" Sampling Interval Every 5 feet

Land-Surface Elev. 556.76 feet ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used None Drilling Method Hollow Stem Auger

Drilling Contractor GRAVES SERVICE CO. Driller Ron Helper Hal

Prepared By J. KIRKPATRICK Hammer Weight 140 Hammer Drop 30 inches

Sample/Core Depth  
(feet below land surface)  
From To  
Core Recovery  
(feet)  
Time/Hydraulic  
Pressure or  
Blows per 6  
inches

Sample/Core Description

				SEE LITHOLOGY LOG FOR P-2875 FOR DETAILED LITHOLOGIC DESCRIPTIONS
3	5	18"	8/6/95	SILT + SAND, dark reddish brown, none cohesive, loose, dry, overlying CLAY
				CLAY is dark yellowish orange (10 YR 4/6), medium stiff, damp to dry, no odor (CL)
8	10	14"	2/1/1/2	SILT(Y) Fill material, bluish white (5 B 9/1) soft, damp to wet, sewer odor,
13	15	14"	4/1/1/2	SILT(Y) Fill material, bluish white (5 B 9/1) very soft w/ air bubbles, wet, sewer odor,
18	20	16"	3/5/9/13	Mostly SILT(Y) Fill material as above (probably from inside the augers) Tip of Spoon has some yellowish brown clay (10 YR 5/4)
				SHELBY TUBE — 23.0 to 24.5 (Refusal at 24.5 ft)

OVM

0.0

0.0

0.0

*[Signature]*  
7/13-95

(18) 12/19/92



**SAMPLE/CORE LOG**

Boring/Well 7-25-95 Project/No. TF0320.013

Page 1 of 1

Site Location SW-4-BIRMINGHAM, ALABAMA

Drilling Started 7/14/95

Drilling Completed 7/15/95

Total Depth Drilled 76 feet Hole Diameter 6 inches

Type of Sample/  
Coring Device —

Length and Diameter  
of Coring Device —

Sampling Interval — feet

Land-Surface Elev. 556.76 feet ☒ Surveyed ☐ Estimated

Datum MSL

Drilling Fluid Used 50 GAL OF H<sub>2</sub>O

Drilling Method AIR ROTARY/HAMMER

Drilling Contractor GRAVES

Driller JOHN M.

Helper JOE/DWIGHT

Prepared By J. HUGHES

Hammer —

Hammer —

Weight —

Drop —

Sample/Core Depth  
(feet below land surface)

From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 Inches
------	----	----------------------	---

Sample/Core Description

0	28	HSA	SEE HSA LOGS FOR LITHOLOGY/DESCRIPTION
20	32	AIR ROTARY 10" HOLE	ROCK, (CHERT, S.S., & L.S.), w/ SOFT SPOTS (BROKEN SPOTS) (HARD SPOTS ARE LESS THAN 1 FOOT THICK)
			SURFACE CASING SET TO 32 FT BLS
32	46	ROTAARY AIR HAMMER 6" HOLE	LIME STONE, MED GRA (NS), w/ ABUNDANT COARSE CALCITE CRYSTALS FILLING FRACTURES/VEINS - FRACTURED 45.75 HARD, UNFRACTURED L.S.
			FROM AIR ROTARY/BIT
22.75	24		BROKEN ROCK, C.S. w/ CALCITE VEINS
24	25		L.S. HARD w/ CALCITE VEINS
25	26.5		L.S., BROKEN w/ CALCITE VEINS
26.5	27		CLAY + L.S. w/ MUD SAND & CHERT
27	31		BROKEN L.S. w/ CALCITE VEINS POTENTIAL H <sub>2</sub> O BEARING
31	31.75		L.S., BROKEN, w/ SOFT SPOTS ZONE:
31.75	35.25		L.S., HARD, w/ CALCITE VEINS
35.25	37		SOFT BROKEN L.S.
37	44		ALTERNATING HARD & SOFT L.S.

JH 12/15/97

000153

# SAMPLE/CORE LOG

Boring/Well P-28 Project/No. TF0320013 SLOSS INDUSTRIES Page ( ) of 2

Site Location BIRMINGHAM ALABAMA Drilling Started 7-12-95 M36 Drilling Completed 7-12-95 1715

Total Depth Drilled 28.0 feet Hole Diameter 7 1/4 inches Type of Sample/ Coring Device Split Spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 556.87 feet ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used None Drilling Method Hollow Stem Auger

Drilling Contractor GRAVES SERVICE CO. Driller RON Helper HAL

Prepared By J. KIRKPATRICK Hammer Weight 12/0 Hammer Drop 30 inches

Sample/Core Depth (feet below land surface)	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
From To			

OVM


FILL MATERIAL

0	2	18"	10/1/23/15	SILT + SAND, dark yellowish brown, (10 YR 4 1/2)	0.0
				non-cohesive, loose, dry, no odor	
				(SM) K+ 2/6/96	
2	4	18"	10/2/11/8	SILT + SAND, dark yellowish brown (10 YR 4 1/2)	0.0
				non-cohesive, loose, dry, no odor.	
				(SM) K+ 2/6/96	
4	6	16"	6/5/4/4	SILT and SAND, as above (SM) K+ 2/6/96	0.0
6	8	12"	1/2/1/1	SILT, trace sand, bluish white (5 B 9 1/1),	0.0
				semi-cohesive, soft, damp to wet, no odor	
				(Appears similiar to the piles of white SLOSS debris around the drilling area)	
8	10	20"	2/2/2/2	SILT, trace sand, bluish white, (5 B 9 1/1)	0.0
				as above	
10	12	24"	1/2/2/1	SILT(Y) fill material w/ trace sand (?) as above.	0.0
12	14	24"	5/5/1/2	SILT(Y) fill material, as above, wet	0.0
14	16	24"	2/3/5/3	SILT(Y) fill material, as above, more plastic	0.0
16	18	24"	2/2/3/2	SILT(Y) fill material, soft, w/ air bubbles, plastic, bluish white (5 B 9 1/1), wet, no odor	0.0
18	20	24"	2/1/2/3	SILT(Y) fill material, as above, wet, sewer odor	0.0

BAD SPOON

W.K.



 12/11/22  
 RW-25D

5

### SAMPLE/CORE LOG (Cont.d)

Boring/Well

Page 2 of 2

Prepared By T. KIRKPATRICK

Sample/Core Depth  
(feet below land surface)

Core  
Recovery  
(feet)

Time/Hydraulic Pressure or Blows per 6 inches

Sample/Core Description

OVH

18	20	21"	5/7/10/14	CLAY, pale yellowish orange (10 YR 8 1/2) medium stiff, trace white limestone rubble, damp, <del>no</del> <sup>sewer</sup> odor (CL)	0.0
20	22	18"	9/18/12/19	CLAY, some <sup>coarse</sup> limestone rubble (white) clay is (CL) mottled greenish gray (5 G 4/1) and dark yellowish orange (10 YR 4/6), medium stiff, damp, <sup>sewer</sup> odor	0.0
22	24	14"	4/4/4/8	CLAY, some limestone rubble (weathered) (white), clay is mottled color as above, medium stiff, <del>damp</del> <sup>wet</sup> , sewer odor.	0.0
24	26	24"	5/12/27/24	CLAY, w/ limestone rubble (gravel size chunks) mostly olive gray (5 Y 4/1), stiff, damp, sewer odor.	0.0
26	28	12"	25/50/5"	CLAY w/ limestone rubble (gravel size broken L.S. w/ calcite), clay is <del>dirty</del> olive gray (5 Y 4/1), appears layered like a shale (may be highly weathered shale), very stiff to hard, dry, no odor, (CL).	0.0
				SPoon REFUSAL - 27 Ft bls.	
				AUGER REFUSAL - 28 Ft bls.	
				W-12-95	

SAMPLE/CORE LOG

Boring/Well P-285 Project/No. TF0320013 SLOSS INDUSTRIES Page 1 of 2

Site Location BIRMINGHAM ALABAMA Drilling Started 7-24-95 0800 Drilling Completed 7-26-95 1320

Total Depth Drilled 67.0 feet Hole Diameter 6 inches Type of Sample/ Coring Device None

Length and Diameter of Coring Device 2' x 2" Sampling Interval None feet

Land-Surface Elev. 556.37 feet ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used AIR Drilling Method AIR HAMMER/ROTARY

Drilling Contractor GRAVES SERVICE CO. Driller DWIGHT PRUITT Helper J.B.

Prepared By J. KIRKPATRICK Hammer Weight NA Hammer Drop NA inches

Sample/Core Depth  
(feet below land surface)  
From To Core  
Recovery  
(feet) Time/Hydraulic  
Pressure or  
Blows per 6  
inches

Sample/Core Description

0	28	HSA	SEE O.B. LITHOLOGY LOG FOR P-285.
22	44		SEE LITHOLOGY LOG FOR P-285 (ROCK LOG)
23.0	24.0	9 7/8" Roller Cone bit	LIMESTONE, broken, weathered, gray w/ calcite
24.0	25.0		LIMESTONE, hard, gray.
25.0	27.5		LIMESTONE, broken + weathered, clayey zones, gray (NS), calcite veins noted.
27.5	29.0		LIMESTONE, broken, gray w/ calcite veins.
29.0	31.0		LIMESTONE, hard, gray - hard drilling, competent rock.
			31' - BOTTOM OF 6" STEEL SURFACE CASING.
31	37		LIMESTONE, broken, weathered, some calcite, medium light gray (NS), medium hard, dry.
37	39		CLAY, medium light gray (NS), damp.
39	44		LIMESTONE, broken, weathered, medium light gray (NS), hard to medium hard.
44	63		LIMESTONE and CLAY (OR WEATHERED SHALE) in lenses about 1 to 2 ft thick throughout this zone.
			LIMESTONE is broken and weathered, medium



**SAMPLE/CORE LOG**

Boring/Well FW-26 Project/No. SL055 TX0320.013 Page 1 of 2  
Site Location SL055 - BIRMINGHAM Drilling Started 6/12/95 Drilling Completed 6/12/95  
Total Depth Drilled 22.8 feet Hole Diameter 7 1/4 inches Type of Sample/ Coring Device S/S  
Length and Diameter of Coring Device 2' x 2" 2/6/95 Sampling Interval CONT feet  
Land-Surface Elev. 547.41 feet ☒ Surveyed ☐ Estimated Datum MSL  
Drilling Fluid Used --- Drilling Method HSA  
Drilling Contractor GRAVES Driller RON Helper DONALD  
Prepared By J. HUGHES Hammer Weight 140 Hammer Drop 30 inches

Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 Inches	Sample/Core Description	TIP
From	To				
0	2	1	11/2/7/6	CLAY, MOTTLED DUSKY BROWN - LIGHT BROWN w/ 1/2 gravel & organics, DRY, NO ODOOR (CL)	ND
2	4	1	4/6/7/10	CLAY, MOTTLED BROWN, w/ DARK YELLOWISH BROWN BLESS, STIFF DRY, NO ODOOR (CL)	ND
4	6	1	5/4/5/8	same as 2-4, DRY, NO ODOOR	ND
6	8	1.25	4/7/8/10	CLAY, MOTTLED, DARK YELLOWISH ORANGE - VERY PALE ORANGE, STIFF, w/ minor black glass, DRY, NO ODOOR (CL)	ND
8	10	1.5	5/2/8/10	CLAY, GRAYISH ORANGE, w/ black mottling, STIFF, DRY, NO ODOOR (CL)	ND
10	12	1.5	7/11/13/12	SAME AS 8-10, MOIST, NO ODOOR	ND
12	14	1.5	3/5/5/3	CLAY, GRAYISH ORANGE, w/ LIGHT BROWN MOTTLING, STIFF, SATURATED, NO ODOOR w/ some chert gravel (CL)	NO



## SAMPLE/CORE LOG

Boring/Well 227 Project/No. SWSS TF-320.013 Page 2 of 2

Site Location Scars, Birmingham, Alabama Drilling Started 6/12/95 Drilling Completed 6/12/95

Total Depth Drilled 22.8 feet      Hole Diameter 7 1/4 inches      Type of Sample/  
Coring Device S/S

Length and Diameter of Coring Device 2' x 2" 196 Sampling Interval CONT feet

Land-Surface Elev. 547.41 feet ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used \_\_\_\_\_ Drilling Method HSA

Drilling Contractor GRAVES Driller RON Helper Dink

Prepared By J. Hughes Hammer Weight 140 Hammer Drop 30 inches

Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 Inches
From	To		

### Sample/Core Description

NO	DEPTH (ft)	WATER CONTENT (%)	DATE	DESCRIPTION	REMARKS
14	16	1.5	8/7/14/43	CLAY SAME AS 12-14, SATURATED (6")	NO
				OVERLYING CLAY, MODERATE YELLOWISH BROWN, COHESIVE, W/LS FRAGMENTS, DRY, NO ODOOR - WEATHERED SURFACE (CL)	
17	19	0.5	6/9/11/14	CLAY, PALE YELLOWISH ORANGE, STIFF, MOIST, NO ODOOR (CH)	N1
19	21	1.0	22/45/50	CLAY SAME AS 17-19, SATURATED (6") OVERLYING SAME CLAY W/ L.S. FRAGMENTS (FINE GRAINED CR/STALLINE L.S. W/ COARSE CRYSTALS FILLING FRACTURES) (CL)	NO
22	<del>24</del> 22.8	0.75	3/15/50	CLAY + L.S. FRAGMENTS SAME 19-21	NO
				REFUSAL ON 2ND SPIN ON FIRST SET OF BLOW COUNTS	

000150 12/18/87

Exhibit 90 175

SAMPLE/CORE LOG

Boring/Well P-27 Project/No. TF0320013 SLUSS INDUSTRIES Page 1 of 1  
 Site Location BIRMINGHAM ALABAMA Drilling Started 6-13-95 0900 Drilling Completed 6-14-95 (P)  
 Total Depth Drilled 141 feet Hole Diameter 8 1/4" 0 to 24" Type of Sample/ Coring Device NA  
 Length and Diameter of Coring Device NA Sampling Interval Continuous from cuttings feet  
 Land-Surface Elev. 547.41 feet ☒ Surveyed ☐ Estimated Datum MSL  
 Drilling Fluid Used Water Drilling Method Air Hammer  
 Drilling Contractor GRAVES SERVICES Co. Driller John Helper J.B./ DWIGHT  
 Prepared By J. KIRKPATRICK Hammer Weight NA Hammer Drop NA inches

Sample/Core Depth (feet below land surface) From To Core Recovery (feet) Time/Hydraulic Pressure or Blows per 6 Inches Sample/Core Description

0	22	—	—	SEE LITHOLOGY LOG FOR OVERBURDEN FOR P-27 BY JOE HUGHES.
22	30	Rock chips		LIMESTONE, crystalline, medium light gray (N6) w/ calcite filled fractures (white N9) hard, dry.
30	40	Rock chips		LIMESTONE, crystalline, medium light gray (N6) w/ calcite filled fractures, hard, dry.
49.7	55.5	Rock chips / hammer action		LIMESTONE, light gray, softer, dry
55.5	74.5			LIMESTONE, medium light gray (N6), hard, calcite filled fractures, dry.
74.5	83	ok		LIMESTONE, as above
83	91			SHALE (?), grayish brown, soft
				<del>LIMESTONE</del>
91	100			LIMESTONE, hard, medium dark gray (N4) numerous soft spots (~ 1/2 foot or less)
100	105			SHALE, gray brown, softer, moist.
105	135			LIMESTONE, dark medium gray (N4), hard occasional soft spot.
135	136			SHALE, brownish gray, soft. (potential water zone)
136	141			LIMESTONE, dark medium gray (N4), hard.

most water produced here (1/4 gpm)



**SAMPLE/CORE LOG**

Boring/Well P-26 Project/No. TF0320.013 Page 1 of 2  
 Site Location ROSS-BIRMINGHAM Drilling Started 6/13/95 Drilling Completed 6/13/95  
 Total Depth Drilled 24 feet Hole Diameter 7 1/4 inches Type of Sample/ Coring Device S/S  
 Length and Diameter of Coring Device 2' x 2" Sampling Interval CONTINUOUS feet  
 Land-Surface Elev. 552.02 feet 552.15 feet ☒ Surveyed ☐ Estimated Datum M.S.L.  
 Drilling Fluid Used \_\_\_\_\_ Drilling Method ASA  
 Drilling Contractor GRAVES Driller RON Helper DAN  
 Prepared By J. Hughes Hammer Weight 140 Hammer Drop 30 inches

Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 Inches	Sample/Core Description	TIP
From	To				
0	2	1.0	9/7/5/3	water in hole CLAY, DARK YELLOWISH ORANGE, STIFF, SATURATED, NO ODOR w/ DARK BROWN MOTTLING & LS FRAGMENTS (RR. FILE) (CH)	ND
2	4	1.0	9/8/5/3	CLAY SAME AS 0-2 w/ 0.35' OF LIGHT BROWN, STIFF SATURATED MOIST, AT BOTTOM OF SPOON (CH)	ND
4	6	1.5	5/10/10/11	CLAY, MODERATE TO DARK YELLOWISH ORANGE, STIFF, MOIST, NO ODOR w/ LT BROWN & BLACK MOTTLING (CH)	
6	8	1.25	9/12/13/14	CLAY SAME AS 4-6 w/ MINOR AMTS OF IRON CONCRETIONS, GRAVEL SIZE, DIA, NO ODOR (CL)	ND
8	10	1.5	11/10/14/14	CLAY, MOTTLED GRAYISH ORANGE TO VERY PALE ORANGE STIFF, DRY, NO ODOR MINOR LIGHT BROWN MOTTLING (CL)	ND
10	12	1.5	12/14/18/23	CLAY, MOTTLED DARK YELLOWISH ORANGE & GRAYISH ORANGE, STIFF, DRY, NO ODOR, SOME BLACK SPECKS IN CLAY (SMALL IRON CONCRETIONS POSSIBLY) FINE GR SAND SIZE (CL)	ND
12	14	1.5	4/6/11/18	CLAY SAME AS 10-12 (CL)	N

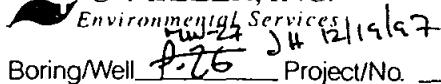
000146 JH 12/15/92

**SAMPLE/CORE LOG**

Boring/Well P-26 Project/No. TF0320.013 Page 2 of 2  
Site Location 5055 Birmingham Drilling Started 6/13/95 Drilling Completed 6/13/95  
Total Depth Drilled 24 feet Hole Diameter 7 1/4 inches Type of Sample/ Coring Device S/S  
Length and Diameter of Coring Device 2' x 2" Sampling Interval CONTINUOUS feet  
Land-Surface Elev. 552.02 feet KT 2/6/96 ☒ Surveyed ☐ Estimated Datum MSL  
Drilling Fluid Used \_\_\_\_\_ Drilling Method HSA  
Drilling Contractor GRAVES Driller RON Helper DENARD  
Prepared By J. Hughes Hammer Weight 140 Hammer Drop 30 inches

Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 Inches	Sample/Core Description	TIP
From	To				
14	16	1.0	5/4/15/16	CLAY, DARK YELLOWISH ORANGE, STIFF, MOIST, H <sub>2</sub> S ODOR, W/LS FRAGMENTS, FN GR CRYSTALLINE LS. (CL)	ND
16	18	1.75	19/18/18/19	CLAY, <sup>MOTTLED</sup> DARK YELLOWISH ORANGE TO GRAYISH ORANGE, STIFF, DRY, NO ODOR, W/ SOME BLACK FN GR. TO MED GR SAND SIZED PARTICLES (IRON CONCRETIONS) (CL)	ND
18	20	1.5	4/3/4/6	CLAY SAME AS 16-18 W/ SOME LENSES OF CLAY LIGHT BLuish GRAY, MOIST, NO ODOR (CH)	
20	22	1.75	1/1/2/3	SAME AS 18-20, MOIST, NO ODOR (CH)	ND
22	24	1.75	3/15/3/15	CLAY SAME AS 20-22, SATURATED, NO ODOR, OVERLUNG 0.75' OF FN GR CRYSTALLINE LS. BROKEN UP (CH)	ND
24	26		50	REFUSAL HAVE FOUND TOP OF ROCK SURFACE  TAKING Shelby/TUBE FROM 20 TO 23 FTs	

000147 JH 12/15/97



## SAMPLE/CORE LOG

Boring/Well P-76 Project/No. TE0320013 SLOSS INDUSTRIES Page 1 of 1

Site Location BIRMINGHAM ALABAMA Drilling Started 6-13-75 1530 Drilling Completed 6-13-95 (KT)

Total Depth Drilled 37 feet      Hole Diameter 6 " <sup>4 1/4" to 2 1/2"</sup> 37 inches      Type of Sample/  
Coring Device NONE

Length and Diameter of Coring Device NONE 1/16 Sampling Interval NONE fee

Land-Surface Elev. 552.07 feet ☒ Surveyed ☐ Estimated Datum MSL  
552.15 Jan 12/19/92

Drilling Fluid Used none or water Drilling Method AIR HAMMER

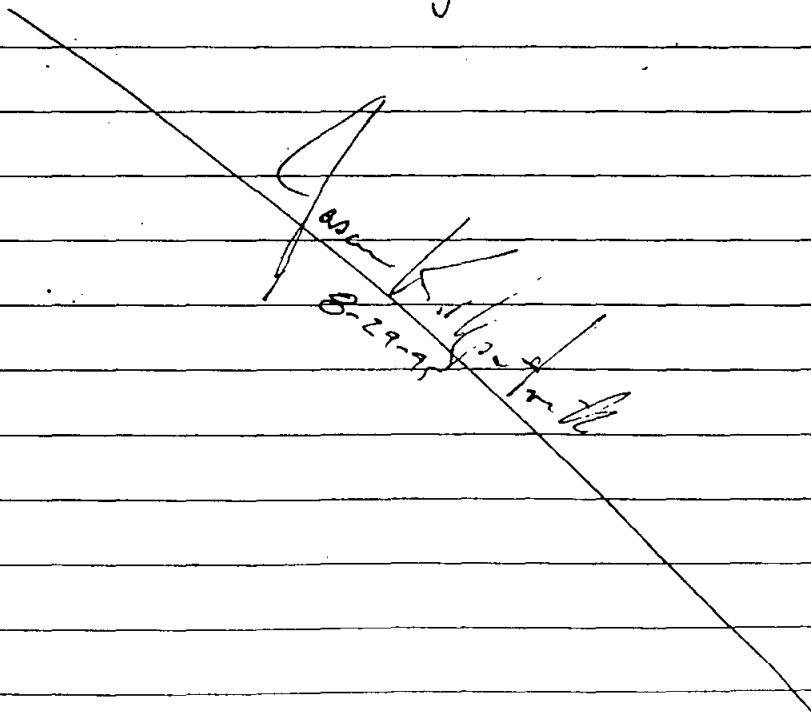
Drilling Contractor GRAVES ENVIRONMENTAL Driller John Helper Dwight / J.B.

Prepared By J. KIRKPATRICK Hammer Weight NA Hammer Drop NA inches

Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 Inches
From	To		

**Sample/Core Description**

0	23		SEE LITHOLOGY FOR 0-23 BY JOE HUGHES
23	23.8	Rock cuttings	LIMESTONE, Fractured, soft, gray color.
23.8	28.15		LIMESTONE, medium gray, hard, crystalline. dry, many calcite filled fractures throughout.
28.15	29.00		LIMESTONE, dark yellowish brown (10 YR 4/2), weathered, softer, water bearing.
29.0	37.0		LIMESTONE, medium light gray (N6), hard, fractured w/ calcite filling.


  
 as per K. J. [unclear]  
 8-29-75 [unclear]

**SAMPLE/CORE LOG**

Boring/Well FW-25 <sup>Jul 12/19/97</sup> Project/No. TEO 320.03 Page 1 of 2  
Site Location SWISS - BIRMINGHAM Drilling Started 6/13/95 Drilling Completed 6/13/95

Total Depth Drilled 18.5 feet Hole Diameter 7 1/4 inches Type of Sample/  
Coring Device S/S

Length and Diameter of Coring Device 2' x 2" Sampling Interval CONTINUOUS feet

Land-Surface Elev. 556.44 feet ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used — Drilling Method HSR

Drilling Contractor GRAVES Driller RON Helper DONALD

Prepared By J. Hughes Hammer Weight 140 Hammer Drop 30 inches

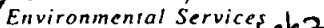
Sample/Core Depth  
(feet below land surface)

From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches
0	2	1.5	10/7/5/7
2	4	1.5	3/5/8/13
4	6	1.5	9/14/14/17
6	8	1.0	11/16/16/15
8	10	1.5	6/5/8/12
10	12	1.5	2/4/4/7
12	14	1.9	11/11/12

Sample/Core Description

TIP

0	2	1.5	10/7/5/7	CLAY, LIGHT BROWN, STIFF, DRY, NO ODOR w/ SOME ORGANICS (ROOTS) w/ 0.75' OF COAL (COKE) ON TOP OF SPOON (CL)	ND
2	4	1.5	3/5/8/13	CLAY SAME AS 0-2 w/ MINOR DARK YELLOWISH ORANGE MOTTLING, STIFF, DRY, NO ODOR (CL)	NO
4	6	1.5	9/14/14/17	CLAY SAME AS 2-4 w/ MINOR DARK YELLOWISH ORANGE & BLACK MOTTLING, STIFF, DRY, NO ODOR (CL)	ND
6	8	1.0	11/16/16/15	CLAY, LIGHT BROWN w/ MINOR DARK YELLOWISH ORANGE MOTTLING, STIFF, MOODY, MOST S/S WAS MOIST ON OUTSIDE (CL)	ND
8	10	1.5	6/5/8/12	CLAY, OLIVE BLACK, STIFF, DRY, NO ODOR, OVERLYING CLAY, MOTTLED MODERATE BROWN TO DARK YELLOWISH ORANGE, STIFF, DRY, NO ODOR w/ SOME GRAVEL SIZED CONCRETIONS	ND
10	12	1.5	2/4/4/7	CLAY, MOTTLED MODERATE BROWN, DARK YELLOWISH ORANGE, & PALE BLUE, STIFF, DRY, NO ODOR (CL)	ND
12	14	1.9	11/11/12	CLAY SAME AS 10-12, STIFF, DRY, NO ODOR SECTION WOUND RUNNING S/S OUT OF HOLE (CL)	ND



Boring/Well 225 Project/No. TF0320.013 Page 2 of 2

Total Depth Drilled 18.5 feet      Hole Diameter 7/4 inches      Type of Sample/  
Coring Device 3/5

Length and Diameter of Coring Device 2' x 2' 1/2 Sampling Interval CONTINUOUS feet

Land-Surface Elev. 556.44 feet ☒ Surveyed ☐ Estimated Datum msl

Drilling Fluid Used \_\_\_\_\_ Drilling Method HSA

Drilling Contractor GRAVES Driller RON Helper DOONAN

Prepared By J. Hughes Hammer Weight 140 Hammer Drop 30 inches

Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 Inches
From	To		

### Sample/Core Description

T.P.

[illegible]

ND

**SAMPLE/CORE LOG**

Boring/Well P-25 Project/No. TF0320013 SLISS INDUSTRIES Page 1 of 1  
Site Location BIRMINGHAM ALABAMA Drilling Started 6-15-95 1100 Drilling Completed 6-15-95 1500  
Total Depth Drilled 58.0 feet Hole Diameter 6 1/8" inches Type of Sample/ Coring Device NONE  
Length and Diameter of Coring Device NONE Sampling Interval NONE feet  
Land-Surface Elev. 556.44 feet ☒ Surveyed ☐ Estimated Datum MSL  
Drilling Fluid Used AIR/ Drilling Method AIR HAMMER  
Drilling Contractor GRAVES SERVICE CO. Driller JOHN M. Helper J.B./DWIGHT  
Prepared By J. KIRKPATRICK Hammer Weight NA Hammer Drop NA inches

Sample/Core Depth (feet below land surface) From To Core Recovery (feet) Time/Hydraulic Pressure or Blows per 6 inches

Sample/Core Description

0	~18			SEE O.B. LOG FOR LITHOLOGY FOR P.25 (BY JOE HUGHES)
16.5	18.5	Rock chips + hammer action		Hard fractured LIMESTONE, light gray (N7)
18.5	19.0			CLAY, yellowish brown.
19.0	32.5			LIMESTONE, light gray (N7), hard, some fractures (?).
32.5	35.0			LIMESTONE, light gray (N7 to N6), medium hardness, (i.e. softer than above)
35.0	52.5			LIMESTONE, light gray (N7), hard w/ soft lenses (from 41' to 45'), some calcite (white N9) filled veins.
52.5	53.0			LIMESTONE, light medium gray (N6), large calcite filled fractures (veins), water bearing zone.
53.0	58.0			LIMESTONE, light gray (N7), hard, small calcite filled veins, dry.
				58.0-TOTAL DEPTH

6-15-95  
J.K.

# **SAMPLE/CORE LOG**

Boring/Well W029 Project/No. Gloss Industries / TF0320.015 Page 1 of 1

Site Location Birmingham, AL Drilling Started 8/7/97 Drilling Completed 8/7/97

Total Depth Drilled 19 feet Hole Diameter 6 inches Type of Sample/ Coring Device SPIT SPOON

Length and Diameter of Coring Device 2' x 2' Sampling Interval CONTINUOUS feet

Land-Surface Elev. 51.86 feet ☒ Surveyed ☐ Estimated Datum AMSL

Drilling Fluid Used NONE Drilling Method USA

Drilling Contractor Graves Service Company, Inc. Driller RON Helper ALTON/DWIGHT/JOHN

Prepared By Joe Hughes Hammer Weight 140 Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) Core Recovery (feet) Time/Hydraulic Pressure or Blows per 6 inches

Sample/Core Description

0	3	AUGERS		COKE	ND
3	5	AUGERS		CLAY AS 5-7	ND
5	7	2.0	3/4/9/15	CLAY, light brown, stiff, no odor, moist (CL)	ND
7	9	2.0	15/24/22/20	Fill (?) CLAY HAD RELATIVELY FRESH GRASS INIT	ND
				CLAY, light brown, stiff, w/COKE, MOIST, NO ODOR (CL)	
9	11	2.0	3/4/6/10	CLAY, w/COKE INIT. DARKER	ND
				CORR TOP FOOT OF SPAN DUE TO COKE, STIFF, NO ODOR, MOIST	
11	13	1.5	9/11/13/13	CLAY, light brown, stiff, no odor, dry to moist (CL)	ND
13	15	1.75	5/6/11/13	CLAY, light brown, very stiff, dry, no odor (CL)	ND
15	17	2.0	11/12/14/15	CLAY, light brown w/med gray (MS) mottling, stiff, moist, no odor (CL)	ND
17	19	2.0	19/19/20/12	CLAY, light brown, stiff to plastic (at bottom) dry to moist, no odor (CL-CH)	ND
19	21	2.0	4/7/7/10	CLAY, as above, moist, no odor w/some med brown (S&G) mottling (CH-CL)	ND
21	23	0.5	19/50/3	CLAY AS ABOVE (D.S.) + ROCK (I.S.) IN BOTTOM OF SPOON (CL-CH)	ND

# SAMPLE/CORE LOG

Boring/Well MW-29 Project/No. Gloss Industries / TF0320.015 Page 1 of 1

Site Location Birmingham, AL Drilling Started 8/12/97 Drilling Completed 8/12/97

Total Depth Drilled 26(36.5/38) feet Hole Diameter 8.75" / 6" / 4" Type of Sample/ Coring Device NA

Length and Diameter of Coring Device NA Sampling Interval NA feet

Land-Surface Elev. 561.86 feet ☒ Surveyed ☐ Estimated Datum FT AMSL

Drilling Fluid Used Water, Wp + Air Drilling Method Air Rotary / Hammer

Drilling Contractor Graves Service Company, Inc. Driller John M. Helper Dwight / Jason / Ken

Prepared By Joe Hughes Hammer Weight NA Hammer Drop NA inches

Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
From	To			
0	21.5			SEE HOLLOW STEM AUGER LOG
21.5	22	Air Rotary	Cuttings	LIMESTONE, MED GRAY (N7), BROKEN, HAND
22	24.25			LIMESTONE, MED GRAY (N7), HAND + CLAY
24.25	25.25			LIMESTONE, MED GRAY (N7), HAND
25.25	25.5			CLAY
25.5	26	Air Hammer		LIMESTONE, MED GRAY (N7) HAND
				TEMPORARY SURFACE CASING SET AT 26 FEET
26	27			LIMESTONE, MED GRAY (N7) HAND
27	28			CAVITY
28	29			LIMESTONE, MED GRAY (N7), MEDIUM HAND
29	30.7			LIMESTONE, MED GRAY (N7), HARD w/ CALCITE
30.7	31			SOFT SPOT
31	36.5			LIMESTONE, MED GRAY (N7) w/ <sup>Some</sup> GRANULARITY (W/ R 714)
				DECOMPOSED AREAS, HAND, w/ ABUNDANT CALCITE FILLED
				VEINS (SOME QUITE LARGE), + STRUCTURAL FEATURES (SINKEN SURF)
				DISJOINED PERMANENCE (CALCITE FILLED VEINS STANDING BUT
				IN ORDER FROM FINE GRANED GROUND MATRIX - IMPLIES HIGHER
				RELATIVE FLOW RATES)
36.5	38	4" Torcon		LIMESTONE AS 31 TO 36.5
				ESTIMATED Q OF 6-12 GPM (DRAWER'S ESTIMATE)





**SAMPLE/CORE LOG**

Boring/Well FW-305 Project/No. TF0320013 SLOSS INDUSTRIES Page 1 of 1  
Site Location BIRMINGHAM ALABAMA Drilling Started 6-20-95 1000 Drilling Completed 6-20-95 1230

Total Depth Drilled 35.0 feet Hole Diameter 8 3/4" 0-20.7 Type of Sample/ Coring Device NONE  
5 3/4" 20-35 inches

Length and Diameter of Coring Device NONE Sampling Interval NONE feet

Land-Surface Elev. 562.21 feet 564.69 216196 ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used AIR Drilling Method AIR HAMMER

Drilling Contractor GRAVES SERVICE CO. Driller JOHN MITCHEL Helper J.R./DWIGHT

Prepared By T. KIRKPATRICK Hammer Weight NA Hammer Drop NA inches

Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 Inches	Sample/Core Description
From	To			
0	20			SEE O.B. LITHOLOGY LOG (G.M.-JOE HUGHES) CLAY, yellow brown, reddish brown, some gravel.
20.3	20.7	Drill cuttings + hammer action		LIMESTONE, hard, gray. Set bottom of <sup>temp.</sup> surface casing at 20.9 ft (casing will be pulled during grouting.)
20.9	22.75			LIMESTONE, hard, gray (N7)
22.75	24.5			LIMESTONE, soft, light olive gray (5Y 5/2) (shale?) <del>sh.</del>
24.5	26.0			LIMESTONE, hard, gray (N7)
26.0	27.5			LIMESTONE, medium hard, gray (N7)
27.5	29.0			LIMESTONE, hard, gray (N7)
* 29.0	29.5			LIMESTONE, soft spot, gray to brownish gray (5YR 4/1), water zone
29.5	33.5			LIMESTONE, hard, <del>soft</del> soft spots, gray.
33.5	35.0			LIMESTONE, medium hard, fractured/broken, (chunks of rock coming up - not cut by hammer) Olive gray (5Y 4/1) dolomite streaks in gray. Limestone.
		35.0	TOTAL DEPTH	

SAMPLE/CORE LOG

Boring/Well P200 Project/No. TF0320.013 Page 1 of 2  
 Site Location SWISS BIRMINGHAM Drilling Started 6/14/95 Drilling Completed 6/14/95  
 Total Depth Drilled 19.5 feet Hole Diameter 7 1/4 inches Type of Sample/ Coring Device S/S  
 Length and Diameter of Coring Device 2' x 2" Sampling Interval CONT feet  
 Land-Surface Elev. 562.26 feet ☒ Surveyed ☐ Estimated Datum MSL  
 Drilling Fluid Used — Drilling Method HSA  
 Drilling Contractor GRAVES Driller RON Helper DONALD  
 Prepared By J. HUGHES Hammer Weight 140 Hammer Drop 30 inches

Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 Inches	Sample/Core Description	T.P
From	To				
0	2	1.0	5/12/12	CLAY & CLAY MIXTURE FOR ROAD CLAY LT BROWN & DARK YELLOWISH BROWN MOTTLED, STIFF, SATURATED, NO ODOR (CL)	NO
2	4	1.25	5/10/11/13	CLAY, DUSKY YELLOWISH BROWN → MODERATE BROWN (BOTTOM OF SPON (3")) STIFF, DRY, NO ODOR + SOME ORGANICS (CL)	NO
4	6	1.0	5/12/10/12	CLAY, LIGHT BROWN, STIFF, DRY, NO ODOR + ORGANICS (CL)	NO
6	8	1.0	6/9/9/14	CLAY SAME AS 4-6 STIFF DRY, NO ODOR + SOME SAND, MED GR, & GRAVEL (CL)	NO
8	10	1.0	5/8/15	CLAY SAME AS 6-8, STIFF, DRY, NO ODOR + SOME GRAVEL (HEAVY/MED GR, COARSE GR, & COAL CORE) (CL)	NO
6	12	0.75	2/5/8/16	CLAY SAME AS 8-10, STIFF, DRY, NO ODOR + SOME GRAVEL (COKE) + POWD GR (CL)	1.5
12	14		16/29/34/39	CLAY, DARK YELLOWISH ORANGE w/ VARY PALE ORANGE MOTTLING, STIFF, DRY, NO ODOR + ORGANICS (ROOTS) (CL)	6.7

000139 5/12/19/97

## SAMPLE/CORE LOG

SAMPLE/CORE LOG

Boring/Well PW-300 541219197 Project/No. GLOSS INDUSTRIES TE0320013 Page 1 of 2  
Site Location BIRMINGHAM ALABAMA Drilling Started 6-15-95 1700 Drilling Completed 6-16-95 0815

Total Depth Drilled 59.0 feet Hole Diameter 8 1/4" 0 to 16" inches Type of Sample/ Coring Device NONE

Length and Diameter of Coring Device NONE Sampling Interval NONE feet

Land-Surface Elev. 562.26 feet 2/6/96 ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used AIR Drilling Method AIR HAMMER

Drilling Contractor GRAVES SERVICE CO. Driller JOHN MITCHELL Helper J.R. DWIGHT

Prepared By J. KIRKPATRICK Hammer Weight NA Hammer Drop NA inches

Sample/Core Depth (feet below land surface) From To Core Recovery (feet) Time/Hydraulic Pressure or Blows per 6 inches

Sample/Core Description

0	16	---	SEE LITHOLOGY LOG FOR O.B. PREPARED BY J. HUGHES (G+M)
16.0	17.0	AIR HAMMER DRILLING	CLAY, yellowish red brown, (appears mottled) soft.
17.0	19.5		LIMESTONE, broken up, gray color, weathered, med. hard.
19.5	21.7		LIMESTONE, hard, light gray color (N6)
21.7	22.7		LIMESTONE, hard, fractured, light gray.
* 22.7	26.0		LIMESTONE, gray (N6 or N7), soft w/ lots of fractures, water bearing zone (muddy) producing 1 to 2 gpm.
26.0	27.0		LIMESTONE, gray (light) N6, hard.
* 28.5	29.3		LIMESTONE, olive gray (5Y 4/1) w/ many calcite veins (white N9), softer limestone water zone (2-3 gpm)
27.3	37.0		LIMESTONE, hard to medium hard, some calcite veins, <sup>medium</sup> gray (N5) to olive gray (5Y 4/1)
37.0	39.0		LIMESTONE, light gray (N7), hard.
* 39	46.0	▼	LIMESTONE, soft to medium hardness, olive

### SAMPLE/CORE LOG (Cont.d)

MW-30D SA  
Boring/Well ~~P-24D~~ J4 12/19/97

Page 2 of 2

Prepared By J. KIRKPATRICK

**Sample/Core Depth**  
(feet below land surface)

Core Recovery (feet)

Time/Hydraulic Pressure or Blows per 6 inches

**Sample/Core Description**

		AIR HAMMER	
			gray (5Y 4/1), calcite filled veins throughout (potential water zone)
46.0	47.0		LIMESTONE, soft, gray
47.0	53.5		LIMESTONE, medium light gray (N6), hard
53.5	55.7		LIMESTONE, soft w/ calcite veins, olive gray (5Y 4/1), water bearing zone, good producer
55.7	57.3		LIMESTONE, Hard, medium light gray and olive gray.
57.3	59.0		LIMESTONE, soft to medium hard, olive gray (5Y 4/1) and gray (N5), possible water zone.
	59.0		TOTAL DEPTH
			<i>Asphalt</i> 6-16-95

# **SAMPLE/CORE LOG**

Boring/Well rw-21 Project/No. Sloss Industries / TF0320.015 Page 1 of 1

Site Location Birmingham, AL Drilling Started 8/6/97 Drilling Completed 8/6/97

Total Depth Drilled 14 feet Hole Diameter 6 inches Type of Sample/ Coring Device SPLIT SPOON

Length and Diameter of Coring Device 2' x 2" Sampling Interval CONTINUOUS feet

Land-Surface Elev. 569.46 feet ☒ Surveyed ☐ Estimated Datum FTMSL

Drilling Fluid Used NONE Drilling Method HSA

Drilling Contractor Graves Service Company, Inc. Driller RON Helper ALTON / JOHN DWIGHT

Prepared By Joe Hughes Hammer Weight 140 Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From To Core Recovery (feet) Time/Hydraulic Pressure or Blows per 6 inches

Sample/Core Description

0	2	2.0	4/8/15	FLUE DUST, dry, no odor
2	4	2.0	4/5/15	FLUE DUST, wet, no odor
4	6	2.0	4/8/16	FLUE DUST, wet, no odor
6	8	2.0	4/12/32	FLUE DUST, wet, no odor w/ 0.1' of
				CLAY IN BOTTOM OF SPOON, MOD BROWN (SYR 4/14), very stiff, dry
8	10	1.25	4/13/15	FLUE DUST, WOOD, ROCK (L.S.), $\frac{1}{8}$ COAL, CLAY w/ COKE (small)
				FILL MATERIAL
10	12	0.25	4/8/15	CLAY, MOD BROWN (SYR 4/14) w/ some light brown mottling (SYR 25/16), stiff, w/ L.S. (lime grain - ed. very crystalline) fragments (float?)
				FILL
12	14	0.5	4/3/16/15	FILL, CLAY AS ABOVE w/ COKE FRAGMENTS
				$\frac{1}{2}$ FRAGMENTS (GRAVEL SIZE) of L.S. PLASTIC, MORT
14	16	0.1		(L.S.) ROCK, WOOD, etc
				Possibly this is FILL MATERIAL
16	18	0.1		ROCK (L.S.)
				Auger NOT ABLE TO GO DEEPER THAN 14 FT BLS
				NO SAMPLES COLLECTED FOR ANALYSIS

# SAMPLE/CORE LOG

Boring/Well MW-31 Project/No. Gloss Industries / TF0320.015 Page 1 of 1

Site Location Birmingham, AL Drilling Started 8/12/97 Drilling Completed 8/13/97

Total Depth Drilled 47 feet Hole Diameter 10" / 6" inches Type of Sample/ Coring Device NA

Length and Diameter of Coring Device NA Sampling Interval NA feet

Land-Surface Elev. 565.46 feet ☒ Surveyed ☐ Estimated Datum FT AMSL

Drilling Fluid Used POTABLE H<sub>2</sub>O + AIR Drilling Method AIR/LARNEY / HAMMER

Drilling Contractor Graves Service Company, Inc. Driller John Mitchell Helper Dwight / Alton / Ron

Prepared By Joe Hughes Hammer Weight NA Hammer Drop NA inches

Sample/Core Depth  
(feet below land surface)

From To

Core Recovery  
(feet)

Time/Hydraulic  
Pressure or  
Blows per 6  
inches

Sample/Core Description

0	4			SEE HOLLOW STEM AUGER LOGS
13	15			Fill, moran, rock, etc
15	17			LIMESTONE, FRACTURED + BROKEN
12	15	Air/Larney	CUTTINGS	LIMESTONE, HARD
				CASING SET TO 19 FEET
21	22			LIMESTONE, BROKEN, + CLAY (LIGHT OLIVE GRAY 5Y 5/2)
				VERY STIFF, moist
22	25.5			CLAY, LIGHT OLIVE GRAY (5Y 5/2), VERY STIFF, moist
25.5	26	Air/Larney	CUTTINGS	LIMESTONE, MED GRAY (N7), FRACTURED
26	28.5			LIMESTONE, VERY HARD, VERY LITTLE CRACKS, MED GRAY (N7)
28.5	29			LIMESTONE, MED GRAY (N7), MED HARD, FRACTURED, w/ some
				MOD YELLOWISH BROWN (10YR 5/4) LIMESTONE (POSSIBLY WEATHERED)
29	33.25			LIMESTONE, MED GRAY (N7), HARD
				SOFT STUFF (W/SHALE OR WEATHERED LIMESTONE) AT 33 TO 33.25
35	38			LIMESTONE, SOFT
38	41			LIMESTONE AS 29 TO 35
41	44.5			LIMESTONE, MED GRAY (N7), MED SOFT
44.5	47			LIMESTONE AS 29 TO 35
				TO 47



**SAMPLE/CORE LOG**

Boring/Well P-7 (R) Project/No. TF0320.013 Page 1 of 1  
 Site FW-32  
 Location SWSS - BIRMINGHAM Drilling Started 6/17/95 Drilling Completed 6/17/95 (19)  
 Total Depth Drilled 12 feet Hole Diameter 7 1/4 inches Type of Sample/ Coring Device S/S  
 Length and Diameter of Coring Device 2' x 2" Sampling Interval CONT feet  
 Land-Surface Elev. 567.24 feet ☒ Surveyed 2/6/96 ☐ Estimated Datum MSL  
 Drilling Fluid Used \_\_\_\_\_ Drilling Method DSR  
 Drilling Contractor GRAVES Driller RON Helper DANNY/HAC  
 Prepared By J. HUGHES Hammer Weight 140 Hammer Drop 30 inches

Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description	
From	To				
0	2	1.5	10/14/11	SILTY SAND, BROWNISH BLACK, COARSE, DRY, NO COAR, (FINE DUST) (SM) KT 2/6/96	T.P 8.1
2	4	1.5	9/6/6/6	SILTY SAND AS ABOVE (SM) KT 2/6/96	9.3
4	6	1.25	8/3/5/2	SILTY SAND AS ABOVE (SM) KT 2/6/96	5.7
6	8	1.25	3/3/1/3	SILTY SAND AS ABOVE (SM) KT 2/6/96	7.3
8	10	1.25	3/25/50	1 1/2" PENETRATION w/ 50 LBS AT 9.0 (SM) SILTY SAND AS ABOVE, SATURATED; w/ LS (FINGER KLS) IN BOTTOM OF S/S	6.4
10	12	0.5	17/10/1/17	LS FRAGMENTS (FINGER KLS) BROKEN (FRACTURED OR WEATHERED) LS. AGGREGS WILL NOT GO DEEPER THAN 5 FT. BCS BECAUSE OF AUGER WALL.	

000094 4/12/19/97

**SAMPLE/CORE LOG**

Boring/Well P-7 Project/No. TF0320013 LOSS INDUSTRIES Page 1 of 4  
 Site FW-32 Location BIRMINGHAM ALABAMA Drilling Started 6-19-95 1340 Drilling Completed 6-21-95 1230  
 Total Depth Drilled 47.5 feet Hole Diameter 9 3/8" 0 to 23.0 inches Type of Sample/ Coring Device NONE  
 Length and Diameter of Coring Device NONE Sampling Interval NONE feet  
 Land-Surface Elev. 567.24 feet ☒ Surveyed ☐ Estimated Datum MSL  
 Drilling Fluid Used AIR Drilling Method AIR HAMMER  
 Drilling Contractor GRAVES SERVICE CO. Driller John Mitchell Helper DWIGHT  
 Prepared By J. KIRKPATRICK Hammer Weight NA Hammer Drop NA inches

Sample/Core Depth (feet below land surface) From To Core Recovery (feet) Time/Hydraulic Pressure or Blows per 6 Inches

Sample/Core Description

0	9	~	~	SEE LITHOLOGY LOG FOR 0.8 FOR P-7 (JOE HUGHES) - CLAY + FILL MATERIAL (RUBBLE, SAND + SILT)
8.5	11.5	roller cone bit for surface casing (cuttings)		LIMESTONE, gray (N7), hard to medium hard, fine grained, competent. No water.
11.5	18.5			SILTY SAND, dark brownish black, loose, moist to saturated, strong creosote odor. Hit water at ~16 ft bbs.
18.5	19.5			LIMESTONE, gray (N7), hard to medium hard.
19.5	22.0			CLAY or SILTY SAND, hard to tell, dark brown, saturated.
22.0	42.5			LIMESTONE, gray (N7), hard. Seem competent SET SURFACE CASING - BOTTOM AT 23.0 ft bbs.
42.5	43.0			LIMESTONE, w/ calcite veins, dark gray (N3) hard but some fractures, water bearing zone (producing 1/2 to 1 gpm - estimated)
43.0	47.5			LIMESTONE, gray (N7) to dark gray (N3) hard.

*Wk*  
6-21-95

0000935

# **SAMPLE/CORE LOG**

Boring/Well MW-33 Project/No. Sloss Industries / TF0320.015 Page 1 of 1  
 Site Location Birmingham, AL Drilling Started 8/ 8/97 Drilling Completed 8/ 8/97  
 Total Depth Drilled 13 feet Hole Diameter 6 inches Type of Sample/ Coring Device SPLIT SPOON  
 Length and Diameter of Coring Device 2' x 2" Sampling Interval CONTINUOUS feet  
 Land-Surface Elev. 554.96 feet ☒ Surveyed ☐ Estimated Datum 554.96 ft a-s-l  
 Drilling Fluid Used NONE Drilling Method HSA  
 Drilling Contractor Graves Service Company, Inc. Driller RON Helper HAN/CHUCK  
 Prepared By Joe Hughes Hammer Weight 40 Hammer Drop 30 inches

Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description	OUM
From	To				
0	2	2.0	4/16/97	FLUE DUST + SOME RUBBER	NO
2	4	1.5	6/5/97	FLUE DUST, MOIST, NO ODOR	NO
4	6	2.0	10/4/97	FLUE DUST, SATURATED, NO ODOR	NO
6	8	2.0	9/8/97	FLUE DUST, SATURATED, NO ODOR	NO
8	10	1.0	4/7/11/97	FLUE + CLAY, PALE OLIVE W/ LIGHT BROWN MOTTLING	NO
				STIFF, W/ ROUNDED PEBBLES, DRY, NO ODOR (CL)	
10	12	2.0	4/6/97	CLAY + FLUE DUST + SOME CLAY AS 8-10 MIXED IN	
				UNSURE IF THIS IS A BAD SPOON OR CLAY ABOVE IS	
				FILL.	
12	14	0.5	4/8/97	CLAY AS 8-10 W/ ROCK (CL)	
				FLUE DUST IN TOP OF SPOON	
				FLUE DUST MUST BE FLOWING IN SPOON HOLE	
				CLAY MAY BE FROM 19 TO 13	
				WILL COLLECT ANOTHER SAMPLE FROM 11 TO 13	
11	13				

# **SAMPLE/CORE LOG**

Boring/Well MW-33 Project/No. Gloss Industries / TF0320.015 Page 1 of 1

Site Location Birmingham, AL Drilling Started 8/9/97 Drilling Completed 8/11/97

Total Depth Drilled 25/39 feet Hole Diameter 10" inches Type of Sample/ Coring Device NA

Length and Diameter of Coring Device                      Sampling Interval                      feet

Land-Surface Elev. 554.46 feet ☒ Surveyed ☐ Estimated Datum 554.46 AMSL

Drilling Fluid Used Potassium Drilling Method Air Rotary/Hammer

Drilling Contractor Graves Service Company, Inc. Driller John M Helper Don Patton

Prepared By Joe Hughes Hammer Weight NA Hammer Drop NA inches

Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
From	To			
0	14	↑ AIR ROTARY CORING	↑ CUTTING	SEE OVER BULDOZ LOG.
14	20			LIMESTONE, HARD, FRACTURED, MED GRAY (N5) N LIGHT BROWN (GIRSL), ROMOTIZED IN LIGHT BROWN AREAS
20	23			LIMESTONE, MEDIUM TO SOFT, MED GRAY (N5) NO ROMOTIZED INTERVALS
23	26.5			LIMESTONE, HARD, LIKE 14-20 EXCEPT NOT FRACTURED.
				STEEL CASING SET TO -26.5 FT
26.5	29.5			LIME STONE, MED GRAY (N7), HARD TO MED HARD, DRY
29.5	31			SOFT SPOT, NO BENTONITE (T-5EPA)
33				SOFT SPOT, TRACE TO SOME CALCITE FILLED VEINS
34.5	38			LIMESTONE, MED GRAY (N7), SHALE, SOFT
38	39			LIMESTONE MED GRAY (N7) HARD.

**SAMPLE/CORE LOG**

Boring/Well P-6DS Project/No. TF0320013 SCSS INDUSTRIES Page 1 of 1

Site Location BIRMINGHAM ALABAMA Drilling Started 6-19-95 1045 Drilling Completed 6-26-95 0900

Total Depth Drilled 34.5 feet Hole Diameter 9 3/8" 0-16 Type of Sample/ Coring Device NONE

Length and Diameter of Coring Device NONE Sampling Interval NONE feet

Land-Surface Elev. 543.84 feet ☒ Surveyed ☐ Estimated 2/6/96 Datum MSL

Drilling Fluid Used AIR Drilling Method AIR HAMMER

Drilling Contractor GRAVES SERVICE CO. Driller John Mitchell Helper Dwight

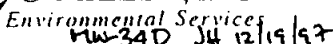
Prepared By J. KIRKPATRICK Hammer Weight NA Hammer Drop NA inches

Sample/Core Depth (feet below land surface) From To Core Recovery (feet) Time/Hydraulic Pressure or Blows per 6 inches

Sample/Core Description

0	12			SEE O.B. LITHOLOGY LOG FOR P-6D (JOB HUGHES) - CLAY + FILL MATERIAL (GRAVEL + RUBBLE).
11.25	13.5	Cuttings		LIMESTONE + CLAY, broken weathered L.S. inter mixed w/ O.B. clay.
13.5	14.0			LIMESTONE, hard, gray
14.0	14.5			LIMESTONE, soft gray
14.5	16.0			LIMESTONE, hard, gray, fine grained Set surface casing bottom at 16.0 ft bls.
16.0	29.5			LIMESTONE, gray (N7), fine grained, hard, competent, dry.
* 27.5	30.25			LIMESTONE, gray (N7) to dark gray (N4) medium hard to soft, broken up rock w/ calcite veins (large calcite chunks 1/4")
				(Water bearing zone - ~ 3+ gpm)
30.25	34.5			LIMESTONE, hard, gray (N7) (dry?)
		34.5		TOTAL DEPTH

*John Mitchell*



Environmental Services  
HW-34D J4 12/19/97  
Boring/Well P-6D Project/No. TF0320.013

Page 1 of 1

Drilling Started 6/16/95

Drilling Completed 6/16/95

Total Depth Drilled 11.5 feet      Hole Diameter 2 1/4 inches

Type of Sample/  
Coring Device           s/s          

Length and Diameter of Coring Device 2' x 2"

Sampling interval CONT feet

Land-Surface Elev. 544.00 feet. KR 2/6/96 ☒ Surveyed

☐ Estimated

Datum M54

Drilling Fluid Used

Drilling Method AS 14

Drilling Contractor Graves

Driller **RON**

Helper DONNY / HAL

Prepared By J. HUGHES

Hammer Weight 140

Hammer  
Drop 30 inches

Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 Inches
From	To		

### Sample/Core Description

0	2	1.0	4/11/5/5	Fill (0.5') <sup>(Gw)</sup> overlying <del>CLAY</del> → SILTY SAND, BROWNISH BLACK, MOIST, NO ODOR (SM)	ND
2	4	1.5	9/5/10/14	<del>CLAY</del> → SILTY SAND, BROWNISH BLACK SATURATED NO ODOR + US FRAGMENTS (FILL), ORGANIC SILT (SM)	ND
4	6	1.75	17/35/24/13	SAME AS ABOVE (FILL MATERIAL) ✓ 1/2 gr SILTY SAND, w/ ORGANIC SILT (SM)	ND
6	8	2.0	11/11/9/8	FILL AS 4-6 <sup>(SM)</sup> overlying 1 FT OF CLAY MODERATE YELLOWISH ORANGE, PLASTIC, SATURATED, NO ODOR (CH)	
8	10	1.0	14/11/1/1	FILL, GRAVEL & BLACK SILTY SAND, DRY, NO ODOR (SM)	
10	12	1.75	6/9/11/50+	4" PENETRATION w/ 50 BLOWS CLAY, DARK YELLOWISH BROWN w/ LIGHT BROWN MOTTLING, STIFF, MOIST, NO ODOR w/ US FRAGMENTS IN BOTTOM OF SPOON (ENG'R KLS) (CL-CH)	

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**SAMPLE/CORE LOG**

Boring/Well P-65 Project/No. TF0320013 GLOSS INDUSTRIES Page 1 of 2  
 Site Location BIRMINGHAM ALABAMA Drilling Started 6-19-95 0835 Drilling Completed 6-21-95 1000  
 Total Depth Drilled 181 feet Hole Diameter 9 1/8" 0 to 16 Type of Sample/ Coring Device NONE  
 Length and Diameter of Coring Device NONE Sampling Interval NONE feet  
 Land-Surface Elev. 544.00 feet ☒ Surveyed ☐ Estimated Datum MSL - AIR HAMMER 6-21-95  
 Drilling Fluid Used AIR/WATER Drilling Method AIR HAMMER  
 Drilling Contractor GRAVES SERVICE CO. Driller John Mitchell Helper Dwight  
 Prepared By J. KIRKPATRICK Hammer Weight NA Hammer Drop NA inches

Sample/Core Depth (feet below land surface) From To Core Recovery (feet) Time/Hydraulic Pressure or Blows per 6 inches

Sample/Core Description

0	12			SEE LITHOLOGY LOG FOR P-65 O.B. (JOE HUGHES) - CLAY + FILL MATERIAL (RUBBLE)
12	16	Roller cone bit mud cuttings		LIMESTONE, highly fractured and broken, medium hard to soft, gray (N7). Became hard + competent from 15.0' to 16.0'
				SURFACE CASING SET - BOTTOM AT 16.0' b/c.
16	19			LIMESTONE, gray (N7), hard, fine grained.
19	35			LIMESTONE, gray (N7) medium hard
35	38			LIMESTONE, gray, hard, dry
38	39			LIMESTONE/SHALE zone, soft, gray (N7) + dark gray (N3) dry
39	51.5			LIMESTONE, hard, gray (N7). dry
51.5	52			<del>LIMESTONE</del> SHALE, dark gray (N3), soft.
52	55			LIMESTONE, hard, gray (N7). dry
55	61			LIMESTONE, medium, gray (N7). dry
61	119			LIMESTONE, gray, hard, occasional soft spots (~71', 73', 78') and (109')
* 119	119.5			SHALE, dark gray (N3), soft, water bearing zone (?)
119.5	152			LIMESTONE, hard, gray (N7)







# SAMPLE/CORE LOG

Boring/Well NW-35 Project/No. Sloss Industries / TF0320.015 Page 1 of 2  
 Site Location Birmingham, AL Drilling Started 8/11/97 Drilling Completed 8/13/97  
 Total Depth Drilled 17.42 feet Hole Diameter 6" / 6" inches Type of Sample/ Coring Device NA  
 Length and Diameter of Coring Device NA Sampling Interval NA feet  
 Land-Surface Elev. 542.46 <sup>ft</sup> 4.5 <sup>ft</sup> ☒ Surveyed ☐ Estimated Datum 542.46 FTMS L  
 Drilling Fluid Used Potable Water Drilling Method Air Rotary / Hammer  
 Drilling Contractor Graves Service Company, Inc. Driller John Helper Dwight / Alton / Ron  
 Prepared By Joe Hughes Hammer Weight NA Hammer Drop NA inches

Sample/Core Depth (feet below land surface) Core Recovery (feet) Time/Hydraulic Pressure or Blows per 6 inches

Sample/Core Description

From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	11.5			SEE HOLLOW STON AUGER LOG
11.5	15.5	1	1	LIMESTONE, MED GRAY (N7), BROKEN & FRACTURED
15.5	17	1	1	HARD LIMESTONE, MED GRAY (N7), FINE GR
				NEUTRALIZED
				CASING SET TO 17 FT BLS
17	19			LIMESTONE, MED GRAY (N7), FN GR, HARD
19	20			LIMESTONE, MED GRAY (N7), FN GR, MEDIUM TO SOFT HARDNESS
20	23			LIMESTONE AS 17-19 w/ TRACE CALCITE FILLED VEINS
23	27			VERY HARD LIMESTONE, MED GRAY (N7), w/ THIN BEDDED
				LIMESTONE, NO CALCITE
27	29			AS 19-20
29	32.75			LYMESTONE, MED GRAY (N7), FN GR, VERY HARD
32.75	33			SOFT SPOT / FRACTURED LIMESTONE w/ SMALL REEF OF CALCITE
				FILLED VEIN
33	36			AS 23-27
36	37			LIMESTONE, MED GRAY (N7), VERY HARD w/ SOME CALCITE FILLED VEINS
				& SOME D&L BROWN CLAY / SILT
37	39			AS 29-32.75



**SAMPLE/CORE LOG**

Boring/Well P-5 <sup>MW-36</sup> Project/No. TF0320.013 Page 1 of 1  
 Site JO 21417 Drilling Started 6/16/95 Drilling Completed 6/16/95  
 Location ROSS - BIRMINGHAM, ALA Type of Sample/ Coring Device S/S  
 Total Depth Drilled 12.5 feet Hole Diameter 2 1/4 inches  
 Length and Diameter of Coring Device 2' x 2" Sampling Interval CONT feet  
 Land-Surface Elev. 530.34 feet ☒ Surveyed ☐ Estimated 2/6/96 Datum MSL  
 Drilling Fluid Used — Drilling Method HGR  
 Drilling Contractor GRANES Driller RON Helper DANNY / HALL  
 Prepared By J. HUGHES Hammer Weight 140 Hammer Drop 30 inches

Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 Inches	Sample/Core Description	TIP
From	To				
0	2	1.5	1/1/1/1	CLAY, MODERATE BROWN → GRAY BROWN PLASTIC, SATURATED, NO ODOR. COLOR CHANGE AT ± 1 FT BLS (H BROWN → GRAY) (CH)	ND
2	4	1.5	2/2/4/5	CLAY, LIGHT BROWN, STIFF, MOIST, NO ODOR. (CL-CH)	ND
4	6	1.5	4/7/8/10	CLAY, DARK YELLOWISH ORANGE, STIFF, MOIST NO ODOR, w/ SOME BLACK (ORGANIC SILT) (CL)	ND
6	8	1.5	8/12/11/14	CLAY, DARK YELLOWISH ORANGE, STIFF, SATURATED AT 7 FT BLS DRY → MOIST 7 FT BLS, NO ODOR, w/ IRON CONCRETIONS, GRAVEL (ANGULAR) AND BLACK ORGANIC SILT (CL)	ND
8	10	1.75	6/7/11/12	CLAY, MOTTLED, DARK YELLOWISH ORANGE, GRAYISH ORANGE & VERY PALE ORANGE, STIFF, DRY, NO ODOR w/ BLACK ORGANIC MATTER (ROOTS) & SILT (CL)	ND
10	12	1	2/1/7/8	CLAY, SAME AS ABOVE, STIFF, DRY, NO ODOR w/ BLACK ORGANIC SILT & MODERATE RED MOTTLING (CL), BOTTOM OF SPIN IS WET	ND
12.5	14.5		1 E0	1/2 INCH OF BROWN ORANGE w/ 50 BLOW, LS FRAGMENTS	—

**SAMPLE/CORE LOG**

Boring/Well P-5 <sup>HW-36</sup> Project/No. TF0320013 SCSS INDUSTRIES Page 1 of 1  
 Site Location BIRMINGHAM ALABAMA Drilling Started 6-20-95 Drilling Completed 6-23-95 1130  
 Total Depth Drilled 137 feet Hole Diameter 9 7/8" 0-15.5 Type of Sample/  
6 1/8" 15.5-137 Coring Device NONE  
 Length and Diameter of Coring Device NONE Sampling Interval NONE feet  
 Land-Surface Elev. 530.34 feet ☒ Surveyed (EF) 2/6/96 ☐ Estimated Datum MSL  
 Drilling Fluid Used AIR Drilling Method AIR HAMMER  
 Drilling Contractor GRAVES SERVICE CO. Driller JOHN MITCHELL Helper J.B. DWIGHT  
 Prepared By J. KIRKPATRICK Hammer Weight NA Hammer Drop NA inches

Sample/Core Depth (feet below land surface) Core Recovery (feet) Time/Hydraulic Pressure or Blows per 6 inches

Sample/Core Description

From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	12.5			GEE O.B. LOG FOR P-5 (JOE HUGHES)
				CLAY, brown to yellowish brown, stiff
12.5	14.5			LIMESTONE, gray (N7 to N6) medium hard
				broken + fractured.
14.5	49.0			LIMESTONE, gray, hard, competent, fine grained
				SURFACE CASING SET - BOTTOM AT 15.5' 6/8.
49.0	50.5			LIMESTONE, olive gray (S Y 4/1), soft
50.5	60.0			LIMESTONE, gray, hard.
60.0	61.0			LIMESTONE, gray, soft to medium hard.
61	110			LIMESTONE, light gray, hard.
110	110.5			L.S., soft
110	132			LIMESTONE, gray (N7), hard + medium hard.
				hard.
* 132	132.5			LIMESTONE, medium gray w/ calcite veins, soft. (water zone ~ 2-3 gpm)
132.5	137			LIMESTONE, gray, hard.

000089 14 12/15/97

## SAMPLE/CORE LOG

# **SAMPLE/CORE LOG**

Boring/Well MW-37 Project/No. Gloss Industries / TF0320.015 Page 1 of 1  
 Site Location Birmingham, AL Drilling Started 8/7/97 Drilling Completed 8/11/97  
 Total Depth Drilled 30 feet Hole Diameter 10" / inches Type of Sample/ Coring Device NA  
 Length and Diameter of Coring Device NA Sampling Interval — feet  
 Land-Surface Elev. 535.36 feet ☒ Surveyed ☐ Estimated Datum FT AMSL  
 Drilling Fluid Used POTABLE H<sub>2</sub>O + AIR Drilling Method AIR ROTARY  
 Drilling Contractor Graves Service Company, Inc. Driller Jones Helper Row / Alton  
 Prepared By Joe Hughes Hammer Weight N/A Hammer Drop N/A inches

Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
From	To			
0	10		1	SEE HOLLOW STEM AUGER LOGS
10.5	11.5			LIMESTONE, MED GRAY (N7), FRACTURED
11.5	12.7			LIMESTONE, MED GRAY (N7), HARD
12.75	13.75			LIMESTONE, MED GRAY, HARD, FRACTURED
13.75	15.0			LIMESTONE, HARD, MED GRAY (N7), MINOR TO
				TRACE CALCITE FILLED VEINS
				STEEL CASING SET TO 15 FTSL
15	18.25			LIMESTONE (MED GRAY (N7), HARD, DRY
18.25				FRACTURED LIMESTONE, (MED GRAY (N7))
				w/ CALCITE FILLED VEINS. MAKES GOOD H <sub>2</sub> O (15-20 GPM)
19.25				LIMESTONE, SOFT (FRACTURE), LESS CALCITE THAN
				18.25
21	23.5			LIMESTONE, MED GRAY (N7), MEDIUM HARD
23.5	30			LIMESTONE, MED GRAY (N7), HARD
				SOFT SPOT AT 25 ± 2.5.

**VOLUME I**

**APPENDIX A.5**

**WELL CONSTRUCTION LOGS**



# GROUNDWATER PIEZOMETER REPORT

Client Gloss Industries Site Location Birmingham, Alabama  
 Well Location NE Access Road to Sand Mountain  
 Project No. TF0320.015  
 Contractor Graves Service Company Inc. Driller(s) John Mitchell  
 Drilling Method(s) Hollow Stem Auger/Air Rotary Helper(s) Dwight/Allen/Rand  
 Prepared By Joe Hughes Date(s) Installed 8/6/97 to 8/9/97

Well/Piezometer No. MW-21

SWMU Area LD

SWMU 23

Survey  
 Datum 10' 556.85 AMSL

Ground  
 Elevation

GENERAL SOIL CONDITIONS (Not to Scale)

0  
 CLAY STIFF TO  
 PLASTIC, DARK GRAY  
 (CL-CH)  
 8.1  
 9'  
 CLAY, STIFF,  
 LIGHT GRAY (CL)  
 23  
 Limestone, fract,  
 hard  
 28.5  
 Limestone, med hard,  
 fract w/ calc fill  
 9.5'  
 CLAY w/ Limestone  
 30.25  
 Limestone  
 32  
 Limestone, hard  
 33.75  
 Fract 31.75 to 32  
 Limestone med w/ clay  
 34.75  
 Limestone, fract, hard  
 36.75  
 Limestone, med hard  
 37.75  
 Limestone, fract,  
 hard  
 42

Steel

Type of Protective Cover

NA

ID of Surface Casing

None

Type of Surface Casing

10"

Diameter of Borehole

NA

Depth Bottom of Surface Casing

2" PVC SCH 40

Type of Riser Pipe

10"

Diameter of Borehole

TYPE I-II (12+8 BAGS)

Type of Grout Around Riser Pipe

24

Depth Top of Seal

BENTONITE PELLETS (2 BAGS)

Type of Seal

27

Depth Bottom of Seal

29

Depth Top of Screen

2" PVC SCH 40

Screen Section Material

2.010 Star

Screen Size

20/30 SAND (16 BAGS)

Type of Sand Pack Around Screen

39

Depth Bottom of Screen

41 SAND

Depth Bottom of Borehole/Sandpack

42 FILL

## REMARKS:

NO PLACE TO SET SURFACE CASING



# GROUNDWATER PIEZOMETER REPORT

Client Sloss Industries  
 Location Birmingham, Alabama  
 Project No. TF0320.013  
 Contractor GRAVES  
 Drilling Method(s) AIR ROTARY  
 Prepared By J. Hughes  
 Driller(s) JOHN M  
 Helper(s) JOE/DWIGHT P.  
 Date(s) Installed 7/19/95 - 7/20/95

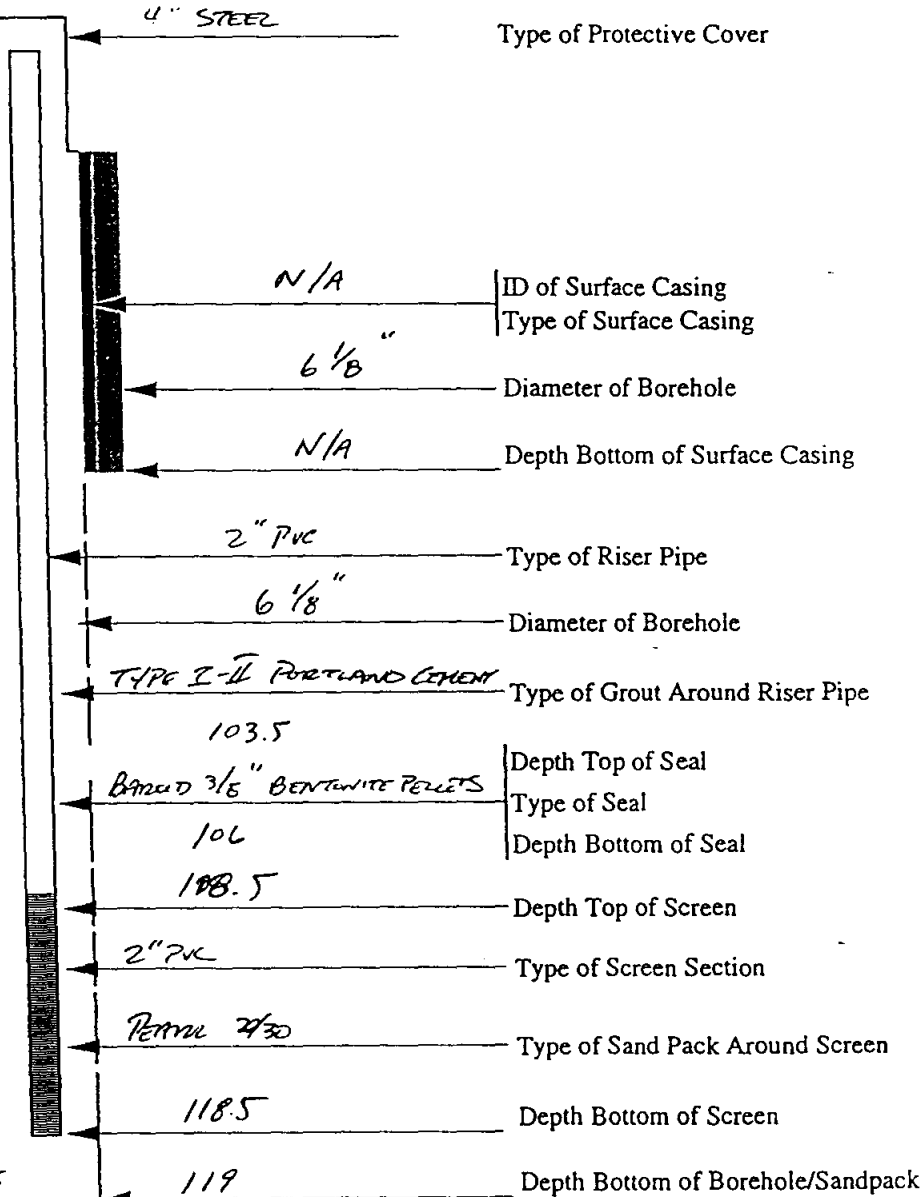
Boring No. PW-22  
P-31  
JD 12/19/97

Survey Datum 628.86 ft cmsl

26/96 Ground Elevation  
625.70 ft cmsl

GENERAL SOIL CONDITIONS (Nc 3 scale)

0 SANDSTONE  
 8.5 CLAY  
 9 SANDSTONE  
 13.5 CLAY  
 S.S. STRINGERS 22.75-28.5  
 28.5 SHALE/CLAY  
 S.S. STRINGER 34.75-35  
 LIGHT BROWN GRAY/CLAY  
 72 BLACK SILT (COAL?)  
 72.5 SHALE/CLAY  
 GRAY  
 BROWN (76-83)  
 83 SANDSTONE TO SILTSTONE  
 MINOR L.S. 102-109.5  
 104.5 LIMESTONE w/  
 CALCITE FILLED FRACTURES  
 MINOR S.S. & SILTSTONE  
 109.5 CLAY & SHALE/CLAY  
 S.S. STRINGERS 111.5  
 114.5 LIMESTONE w/  
 CALCITE FILLED FRACTURES  
 119 ? FINE L.S.



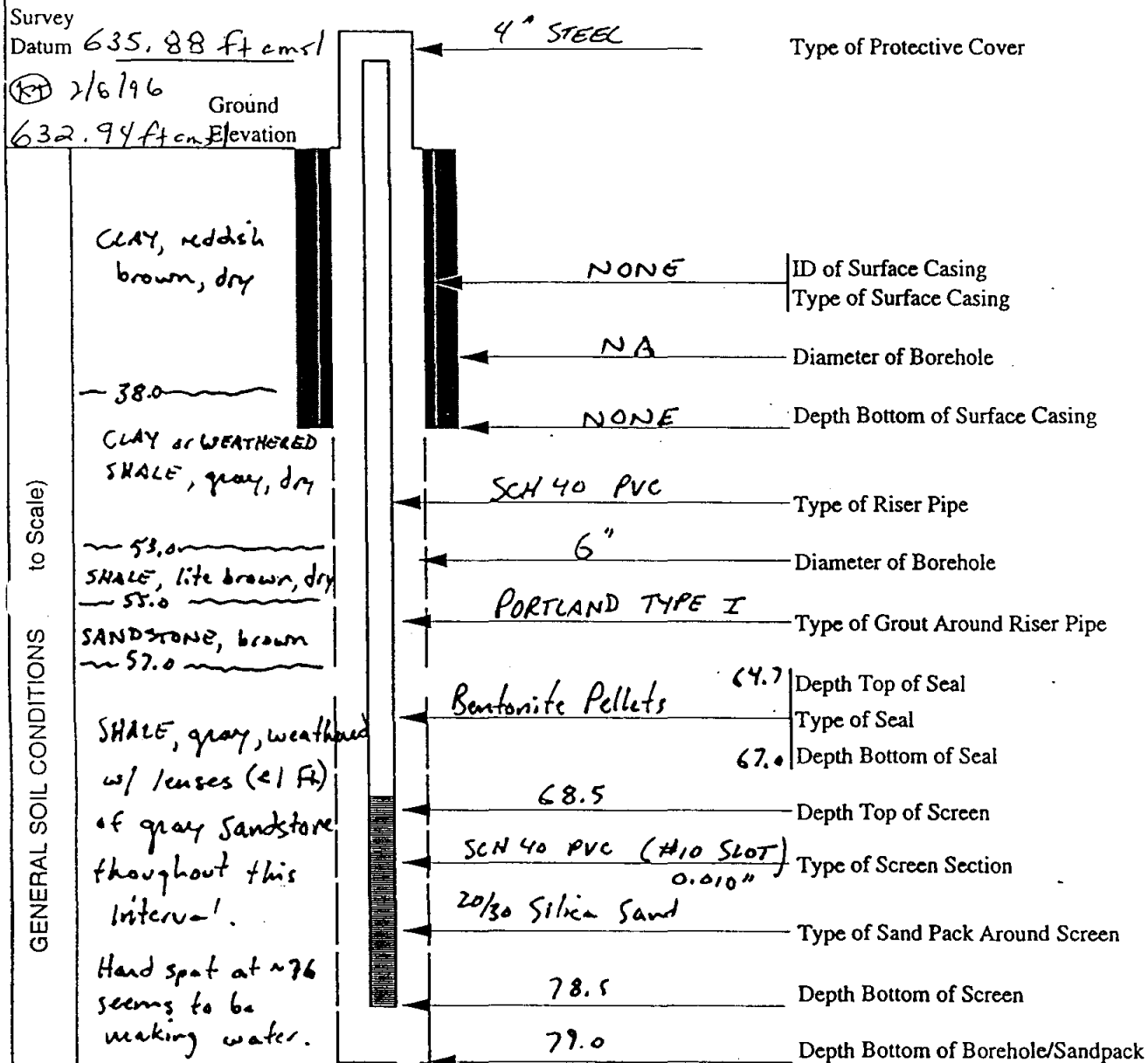
## REMARKS:

± 150 GALLONS ADDED TO BORE HOLE TO CLEAN CUTTINGS OUT OF BORE HOLE.

**GERAGHTY & MILLER, INC.**  
 Environmental Services

# GROUNDWATER PIEZOMETER REPORT

Client	Sloss Industries		Boring No. <u>P-30</u> <u>12/19/97</u>
Location	Birmingham, Alabama		
Project No.	TF0320.013		
Drill Contractor	GRAVES SERVICE CO.	Driller(s) <u>DWIGHT PRUITT</u> <u>JOHN MITCHELL</u>	
Drilling Method(s)	AIR HAMMER/ROTARY	Helper(s) <u>J. BUTLER</u>	7.27.95
Prepared By	J. KIRKPATRICK	Date(s) Installed	JULY 27 1995



## REMARKS:

Used 50 gallons of potable water to clean out bore hole.

**GERAGHTY & MILLER, INC.**  
Environmental Services

# GROUNDWATER PIEZOMETER REPORT

Client Sloss Industries  
 Location Birmingham, Alabama  
 Project No. TF0320.013  
 Contractor GRAVES SERVICE CO. Driller(s) DWIGHT PRUITT  
 Drilling Method(s) AIR ROTARY/HAMMER Helper(s) JOHN ROTLER  
 Prepared By J. KIRKPATRICK Date(s) Installed JULY 26 1995

Boring No. FW-24  
P-29  
54  
2/19/92

Survey Datum 594.99 ft AMSL

5/26/96  
 Ground Elevation 591.81 ft AMSL

4" STEEL

Type of Protective Cover

NONE

ID of Surface Casing

Type of Surface Casing

NA

Diameter of Borehole

NONE

Depth Bottom of Surface Casing

SCH 40 PVC

Type of Riser Pipe

6"

Diameter of Borehole

PORTLAND TYPE 1

Type of Grout Around Riser Pipe

Bentonite Pellets

59.0 Depth Top of Seal

Type of Seal

61.1 Depth Bottom of Seal

63.3

Depth Top of Screen

SCH 40 PVC (0.010" slot)

Type of Screen Section

20/30 Silica Sand

Type of Sand Pack Around Screen

407-15-15

73.3

Depth Bottom of Screen

76.0

Depth Bottom of Borehole/Sandpack

GENERAL SOIL CONDITIONS (Scale)

CLAY, reddish brown, stiff

21.0

SHALE, highly weathered (like clay) gray

29.0

SHALE, weathered, gray, still not very hard.

54.5

SHALE, weathered, dark gray, becoming harder

66.75

SHALE, hard, dark gray

69.0

SANDSTONE, dark gray, medium grained very hard.

76.0

## REMARKS:

Had ~2 ft of fall-in on the bottom of borehole, accumulated between pulling the rods + installing the well. Should have no effect on well.

**GERAGHTY & MILLER, INC.**  
 Environmental Services

00020.1

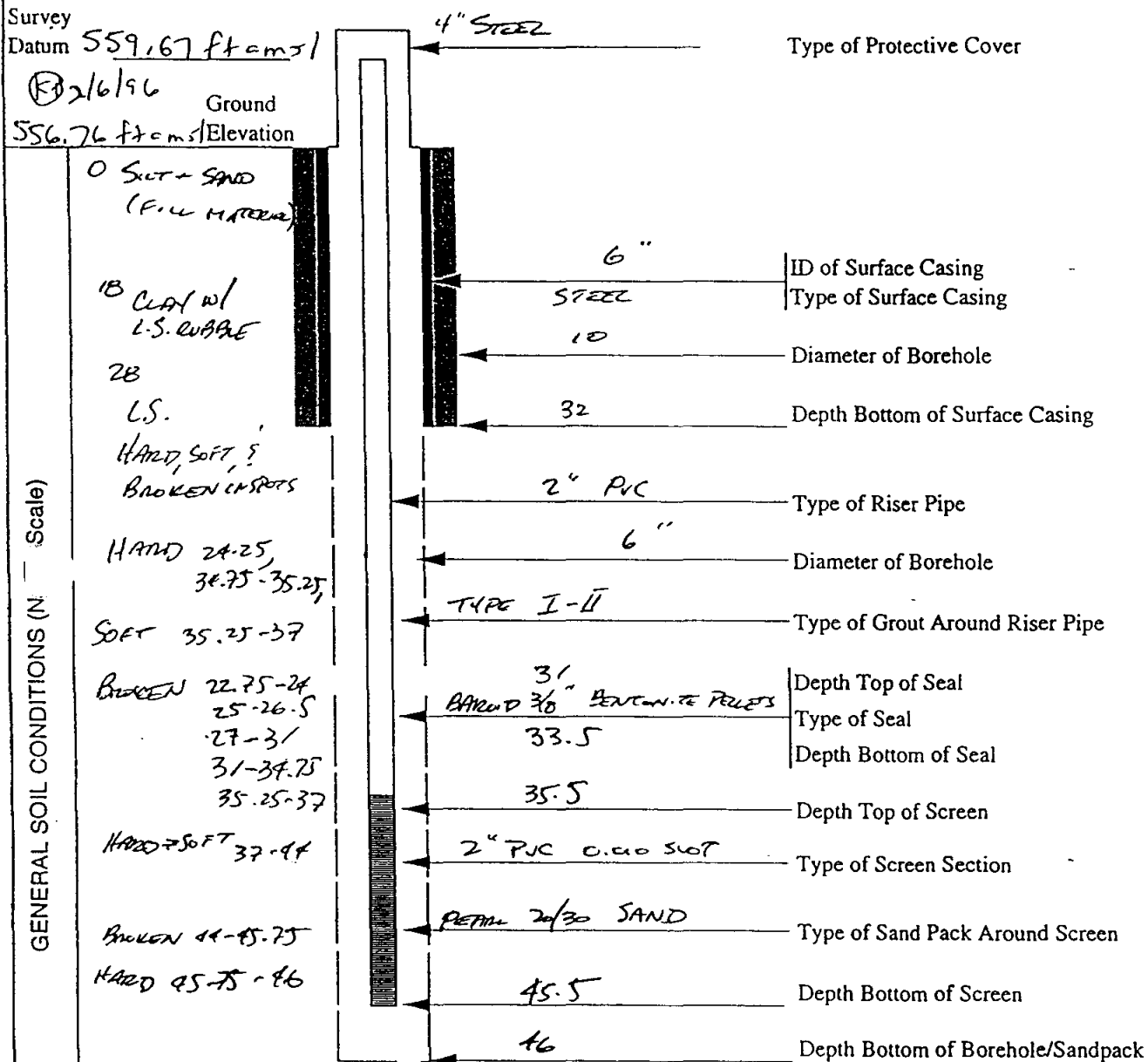
54 12/19/97

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# GROUNDWATER PIEZOMETER REPORT

Client Sloss Industries  
 Location Birmingham, Alabama  
 Project No. TF0320.013  
 Contractor GRAND? Driller(s) JOHN H.  
 Drilling Method(s) A.R. ROTARY Helper(s) JB/DW. ENT  
 Prepared By J. HUGGINS Date(s) Installed 7/14 → 18/95

MW-255  
 Boring No. P-255  
 S  
 JH/12/15/97 25-95



## REMARKS:

50 GAL H<sub>2</sub>O ADDED TO CLEAN BOREHOLE

**GERAGHTY & MILLER, INC.**  
 Environmental Services

# GROUNDWATER PIEZOMETER REPORT

Client Sloss Industries  
 Location Birmingham, Alabama  
 Project No. TF0320.013  
 Contractor GRAVES SERVICE CO. Driller(s) DWIGHT PRUITT  
 Drilling Method(s) AIR ROTARY Helper(s) JOHN BUTLER  
 Prepared By J. KIRKPATRICK Date(s) Installed JULY 26, 1995

Boring No. FW-25D  
P-28D  
JH  
12/19/97

Survey  
 Datum 559.63 ft amsl

(K) 2/6/96  
 Ground  
556.89 ft amsl Elevation

GENERAL SOIL CONDITIONS (Not to Scale)

CLAY and  
LIME FILL

23.0

L.S. broken,  
weathered

29.0

L.S. hard, gray  
31.0

L.S. broken, gray  
same calcite  
37.0

CLAY & SHALE, weathered  
37.0

L.S. broken, weathered  
gray.  
44.0

L.S. and shale (or clay)  
in lenses (1-2 ft  
thick), all med.  
gray color, all  
weathered.  
63.0

L.S., hard, gray  
64.0

L.S. broken, weathered  
gray, w/ calcite.  
67.0

4" STEEL

Type of Protective Cover

6+ " STEEL

ID of Surface Casing

Type of Surface Casing

9 7/8" (10")

Diameter of Borehole

31.0

Depth Bottom of Surface Casing

SCH 40 PVC

Type of Riser Pipe

6"

Diameter of Borehole

PORTLAND TYPE 1

Type of Grout Around Riser Pipe

Bentonite Pellets

51.9

Depth Top of Seal

Type of Seal

54.1

Depth Bottom of Seal

56.3

Depth Top of Screen

SCH 40 PVC (0.010" slot)  
#10

Type of Screen Section

20/30 Silica Sand

Type of Sand Pack Around Screen

66.3

Depth Bottom of Screen

67.0

Depth Bottom of Borehole/Sandpack

## REMARKS:

Washed out borehole w/ 50 gallons of water.

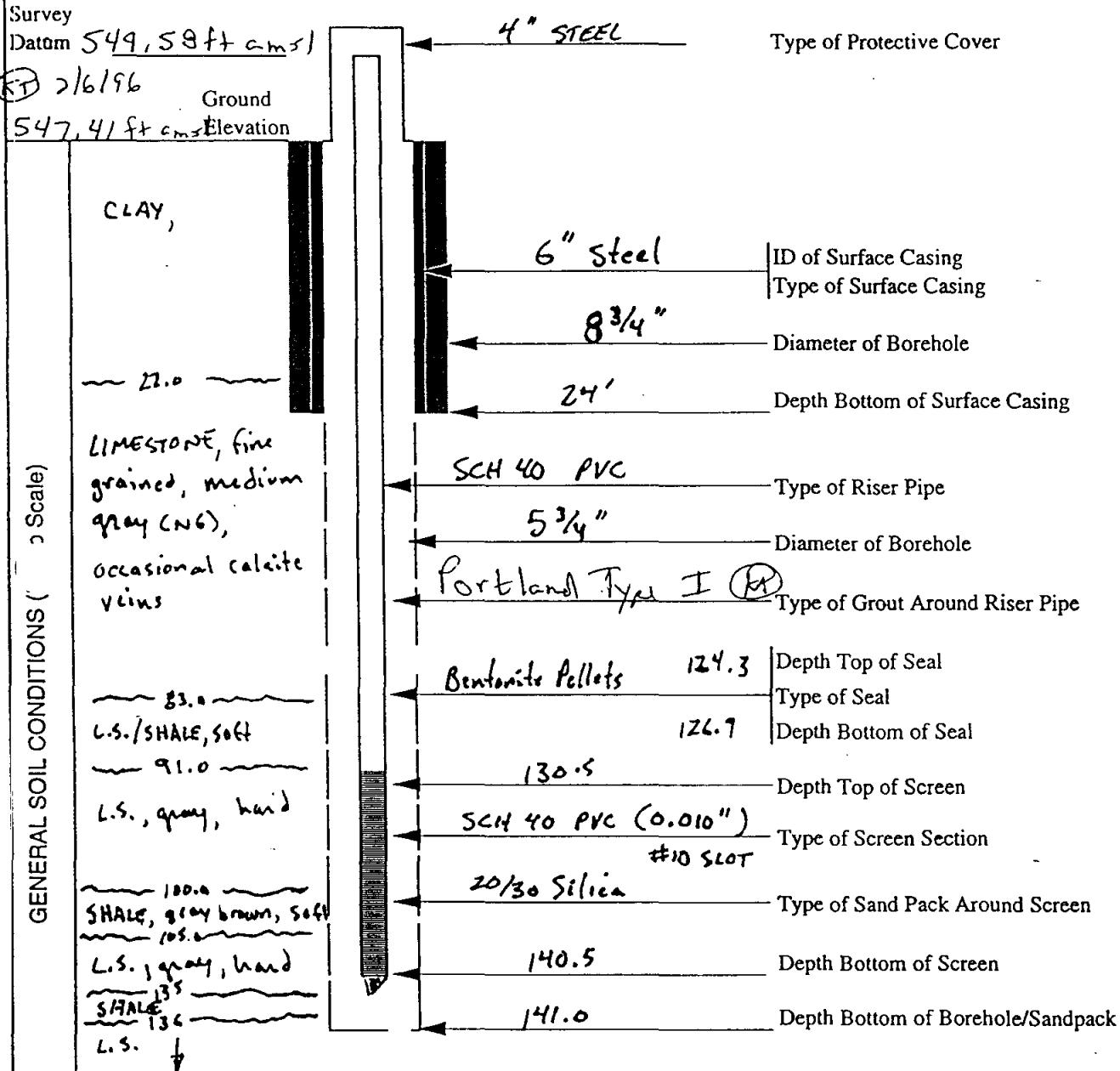


000203 JH  
12/19/97

# GROUNDWATER PIEZOMETER REPORT

Client Sloss Industries  
 Location Birmingham, Alabama  
 Project No. TF0320.013  
 Contractor GRAVES SERVICE CO. Driller(s) JOHN MITCHELL  
 Drilling Method(s) AIR HAMMER Helper(s) J.B. / DWIGHT  
 Prepared By J. KIRKPATRICK Date(s) Installed JUNE 20 1995

Boring No. mw-26  
P-27  
5/4/2/19/97



REMARKS:

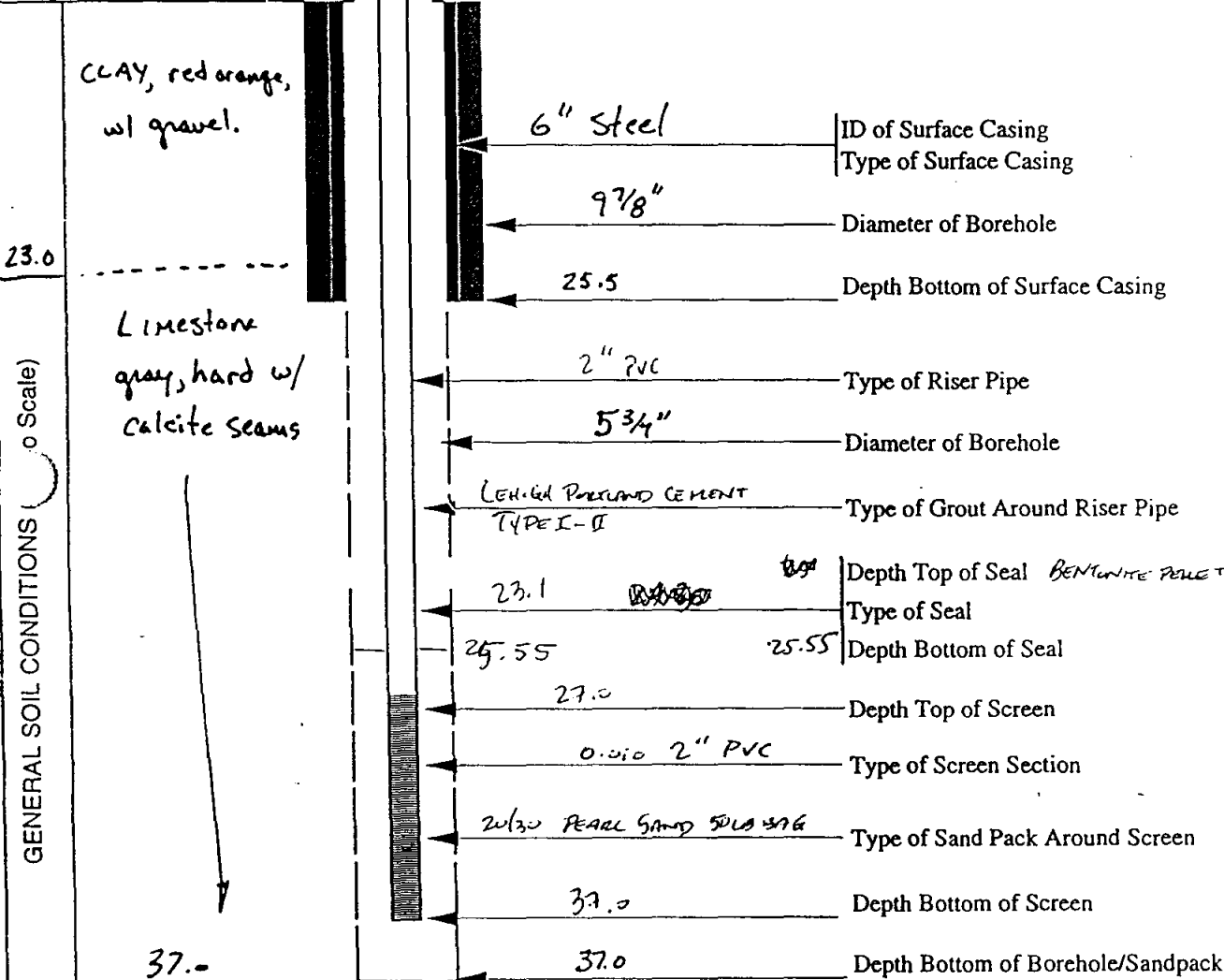
**GERAGHTY & MILLER, INC.**  
 Environmental Services

# GROUNDWATER PIEZOMETER REPORT

Client Sloss Industries  
 Location Birmingham, Alabama  
 Project No. TF0320.013  
 Contractor GRAVES SERVICE CO. Driller(s) John Mitchel  
 Drilling Method(s) Air Hammer Helper(s) J.B. DWIGHT  
 Prepared By J. KIRKPATRICK Date(s) Installed 6-13-95  
DRILLED

Boring No. rw-27  
P-26  
12/19/97

Survey SSA 97 12/19/97  
 Datum SSA 09 ft amsl  
KT 2/6/96  
 Ground Elevation 552.02 ft amsl



## REMARKS:

14-50 LB BAGS OF 20/30 SAND USED  
 1/3-5 GAL MUCKET OF 3/8" BENTONITE PELLETS  
 6-94 BAGS OF TYPE I-II CEMENT

**GERAGHTY  
& MILLER, INC.**  
 Environmental Services



# GROUNDWATER PIEZOMETER REPORT

Client	Sloss Industries		
Location	Birmingham, Alabama		
Project No.	TF0320.013		
Contractor	GRAVES SERVICES CO.	Driller(s)	John Mitchell
Drilling Method(s)	AIR HAMMER	Helper(s)	J.B. / DWIGHT
Prepared By	J. KIRKPATRICK	Date(s) Installed	JUNE 15, 1995

Boring No. MW-28  
P-25  
(54) 12/19/92

Survey  
Datum 558.32 ft AMSL

(K) 2/6/96 Ground  
556.44 ft cms Elevation

4" STEEL

Type of Protective Cover

NONE

ID of Surface Casing

Type of Surface Casing

9"

- Diameter of Borehole

NONE

Depth Bottom of Surface Casing

SCH 40 PVC

- Type of Riser Pipe

6 7/4"

— Diameter of Borehole

PORTLAND TYPE I

- Type of Grout Around Riser Pipe

43.0 | Depth Top of Seal

Depth Top of Seal

Type of Seal *Bentonite pellets*

46.0	Depth Bottom of Seal
------	----------------------

### Depth Bottom of Seal

48.0

— Depth Top of Screen

SCH 40 PVC

- Type of Screen Section

0.010" SLT

20/30 SILICA SAND

— Type of Sand Pack Around Screen

58.0

Depth Bottom of Screen

58.0

Depth Bottom of Borehole/Sandpack

GENERAL SOIL CONDITIONS, \_\_\_\_\_ to Scale)

CLAY  
Reddish brown

18' ———  
LIMESTONE,  
gray, hard,

(52-53)  
LIMESTONE, SOFT  
w/ calcite filled  
veins.

LIMESTONE, gray  
hard

REMARKS:

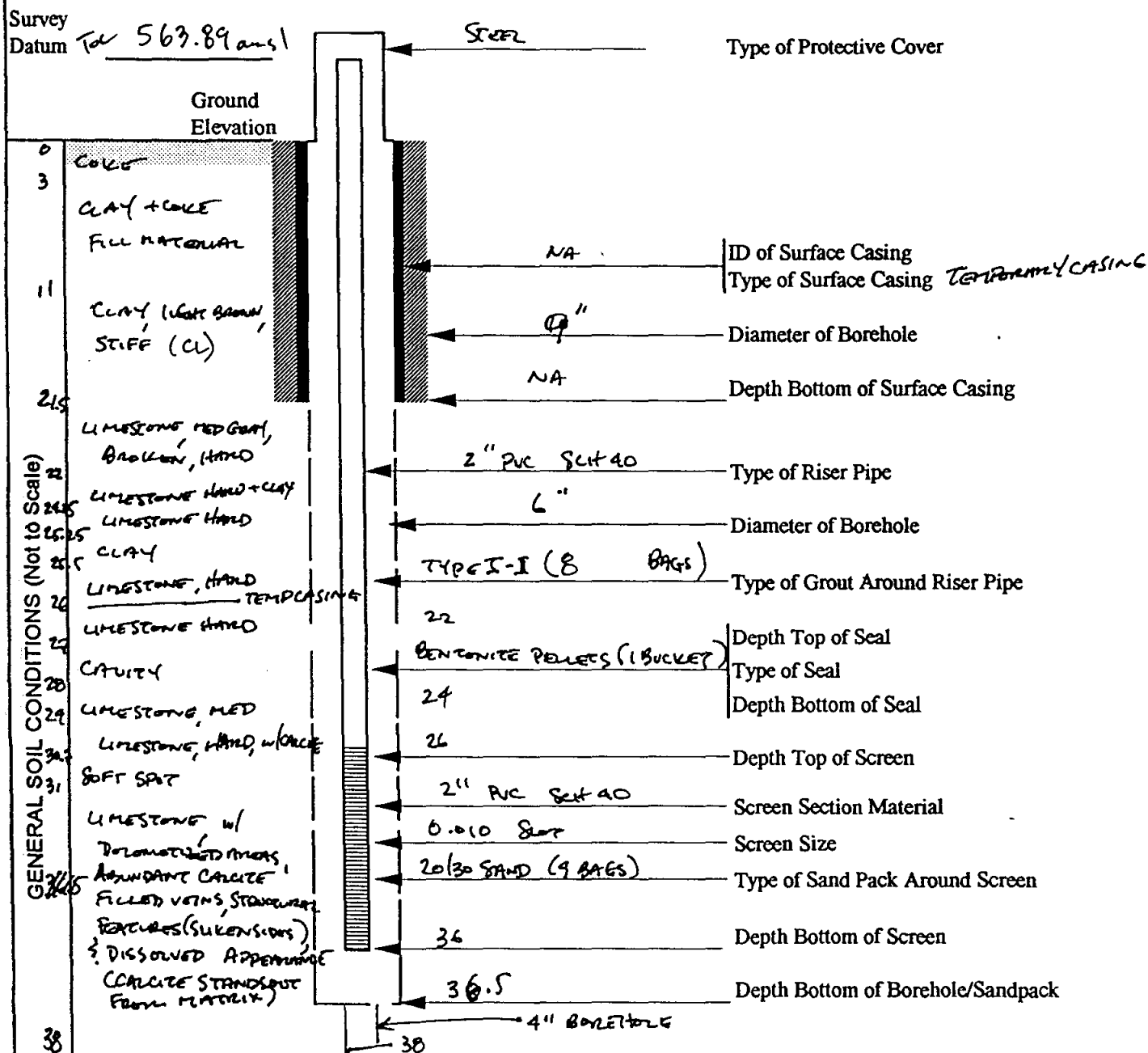


~~000199~~ <sup>44</sup> 12/19/92

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# GROUNDWATER PIEZOMETER REPORT

Client	Sloss Industries	Site Location	Birmingham, Alabama	Well/Piezometer No. <u>rw-29</u>
Well Location	<u>1/2 way between MW-30 &amp; MW-28 ± 30 FT W OF FENCE</u>			
Project No.	TF0320.015			SWMU Area <u>LD</u>
Contractor	Graves Service Company Inc.	Driller(s)	<u>John Mitchell</u>	
Drilling Method(s)	Hollow Stem Auger/Air Rotary	Helper(s)	<u>Ron / Alton / Dwight</u>	SWMU <u>38</u>
Prepared By	Joe Hughes	Date(s) Installed	<u>8/7/97 to 8/12/97</u>	



## REMARKS:

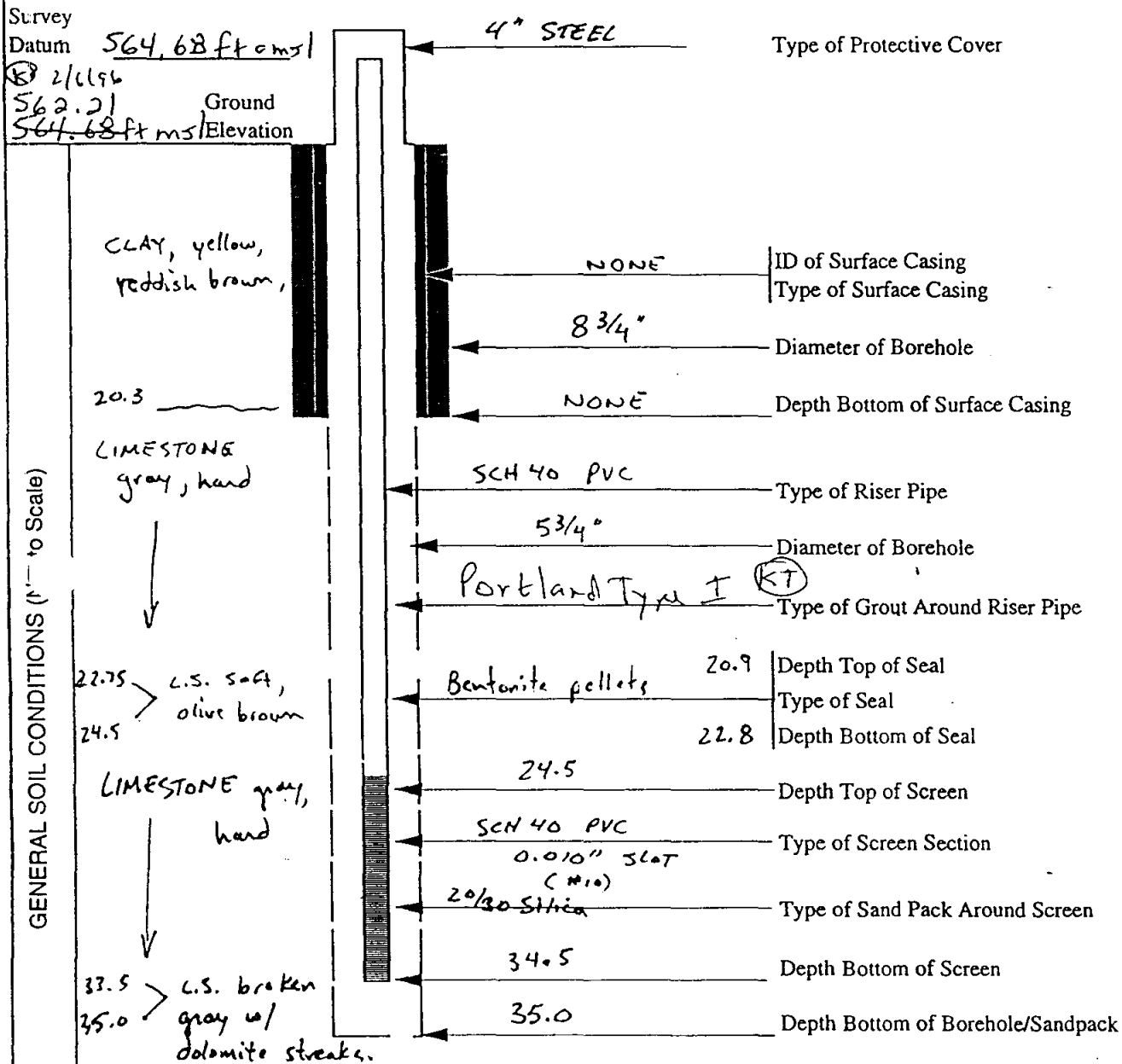
MAKES 10-12 GPM (EST.)

**GERAGHTY & MILLER, INC.**  
Environmental Services

# GROUNDWATER PIEZOMETER REPORT

Client Sloss Industries  
 Location Birmingham, Alabama  
 Project No. TF0320.013  
 Contractor GRAVES SERVICE CO. Driller(s) J. Mitchell  
 Drilling Method(s) AIR HAMMER Helper(s) J.B. / DWIGHT  
 Prepared By J. KIRKPATRICK Date(s) Installed 6-20-95

Boring No. MW-30 S  
P-245  
JA 12/17/92



REMARKS:

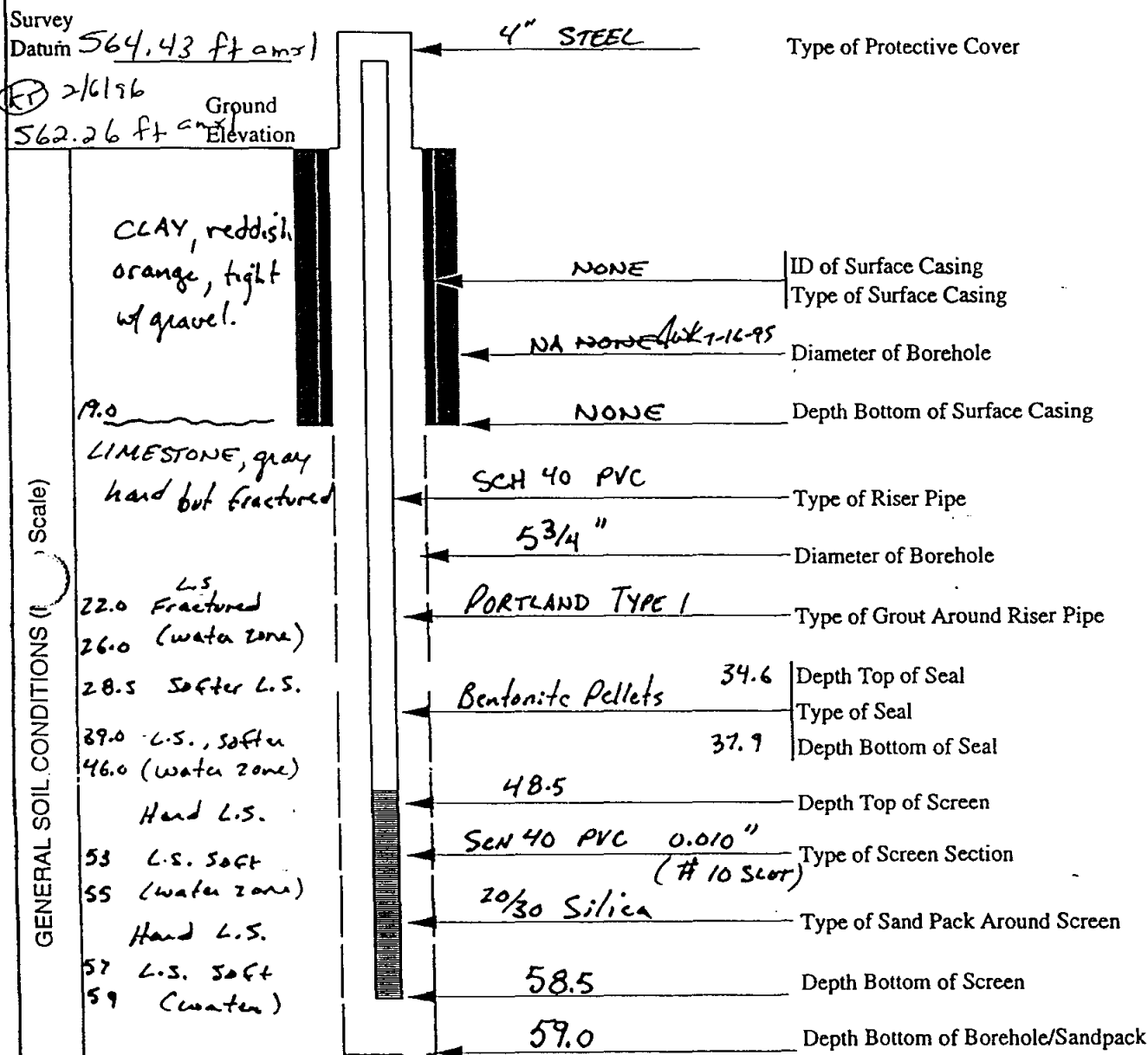
**GERAGHTY & MILLER, INC.**  
 Environmental Services

000197 J4 12/15/92

# GROUNDWATER PIEZOMETER REPORT

Client: Sloss Industries  
 Location: Birmingham, Alabama  
 Project No.: TF0320.013  
 Contractor: GRAVES SERVICE CO. Driller(s): JOHN MITCHELL  
 Drilling Method(s): AIR HAMMER Helper(s): J.B. DWIGHT  
 Prepared By: J. KIRKPATRICK Date(s) Installed: JUNE 16, 1995

Boring No. MW-30D  
P-24D  
JA 12/19/97



REMARKS:

**GERAGHTY & MILLER, INC.**  
 Environmental Services

000193 J 12/19/97

# GROUNDWATER PIEZOMETER REPORT

Client Sloss Industries Site Location Birmingham, Alabama  
 Well Location AT SOUTH WESTERN END OF SUMU 27  
 Project No. TF0320.015  
 Co. or Graves Service Company Inc. Driller(s) JOHN MITCHELL  
 Drilling Method(s) Hollow Stem Auger/Air Rotary Helper(s) ANTON DWIGHT (SEN)  
 Prepared By Joe Hughes Date(s) Installed 8/6/97 TO 8/13/97

Well/Piezometer-No. RW-31

SWMU Area LD

SWMU 39

Survey  
Datum TO 521.52 FTMSL

Ground  
Elevation

STEEL

Type of Protective Cover

FLUE DUST +  
SOME CLAY

6"

ID of Surface Casing

STEEL

Type of Surface Casing

10"

Diameter of Borehole

19'

Depth Bottom of Surface Casing

2" PVC SCH 40

Type of Riser Pipe

6"

Diameter of Borehole

TYPE I-II (B+ BAGS)

Type of Grout Around Riser Pipe

32

Depth Top of Seal

BENICHITE PELLETS (1/2 BAGS)

Type of Seal

39

Depth Bottom of Seal

36.5'

Depth Top of Screen

2" PVC SCH 40

Screen Section Material

0.010"

Screen Size

20/30 SAND 4 BAGS

Type of Sand Pack Around Screen

46.5'

Depth Bottom of Screen

47

Depth Bottom of Borehole/Sandpack

GENERAL SOIL CONDITIONS (Not to Scale)

14 FILL (METAL, BRICK)

15 LIMESTONE, FRAC, HARD

17 LIMESTONE HARD

21 LIMESTONE BROKEN

22 FINESTIFF CLAY, MOIST

CLAY AS 21-22

LIMESTONE, FRAC

22 LIMESTONE, VERY HARD,  
LITTLE CALCITE

28.5 LIMESTONE, FLAT HARD,  
FRACTURED, W/ SOME  
WEATHERED LIMESTONE

29 LIMESTONE, HARD

SOFT AT 33-33.25

35 LIMESTONE SOFT

38 LIMESTONE, HARD

41 LIMESTONE, MED SOFT

44.25 LIMESTONE HARD

## REMARKS:

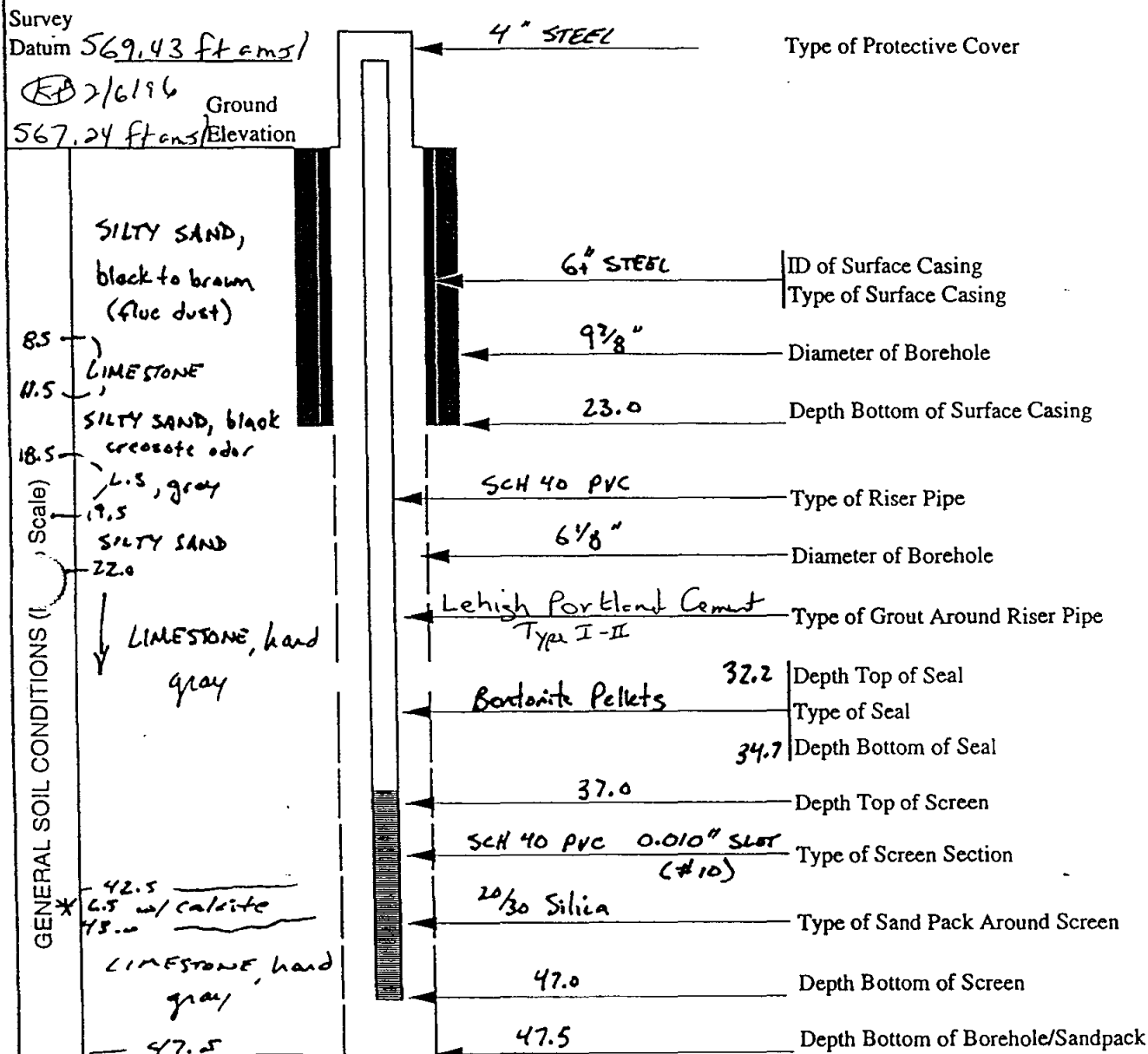
Bore Hole MADE 5 TO 10 GPM FROM 35 TO 47 INTERVAL



# GROUNDWATER PIEZOMETER REPORT

Client Sloss Industries  
 Location Birmingham, Alabama  
 Project No. TF0320.013  
 Contractor GRAVES SERVICE CO. Driller(s) JOHN BUTLER  
 Drilling Method(s) AIR HAMMER Helper(s) J.B. / DWIGHT  
 Prepared By J. KIRKPATRICK Date(s) Installed JUNE 21 1993

Boring No. MW-32  
PT  
JD 12/19/97



## REMARKS:

\* water zone



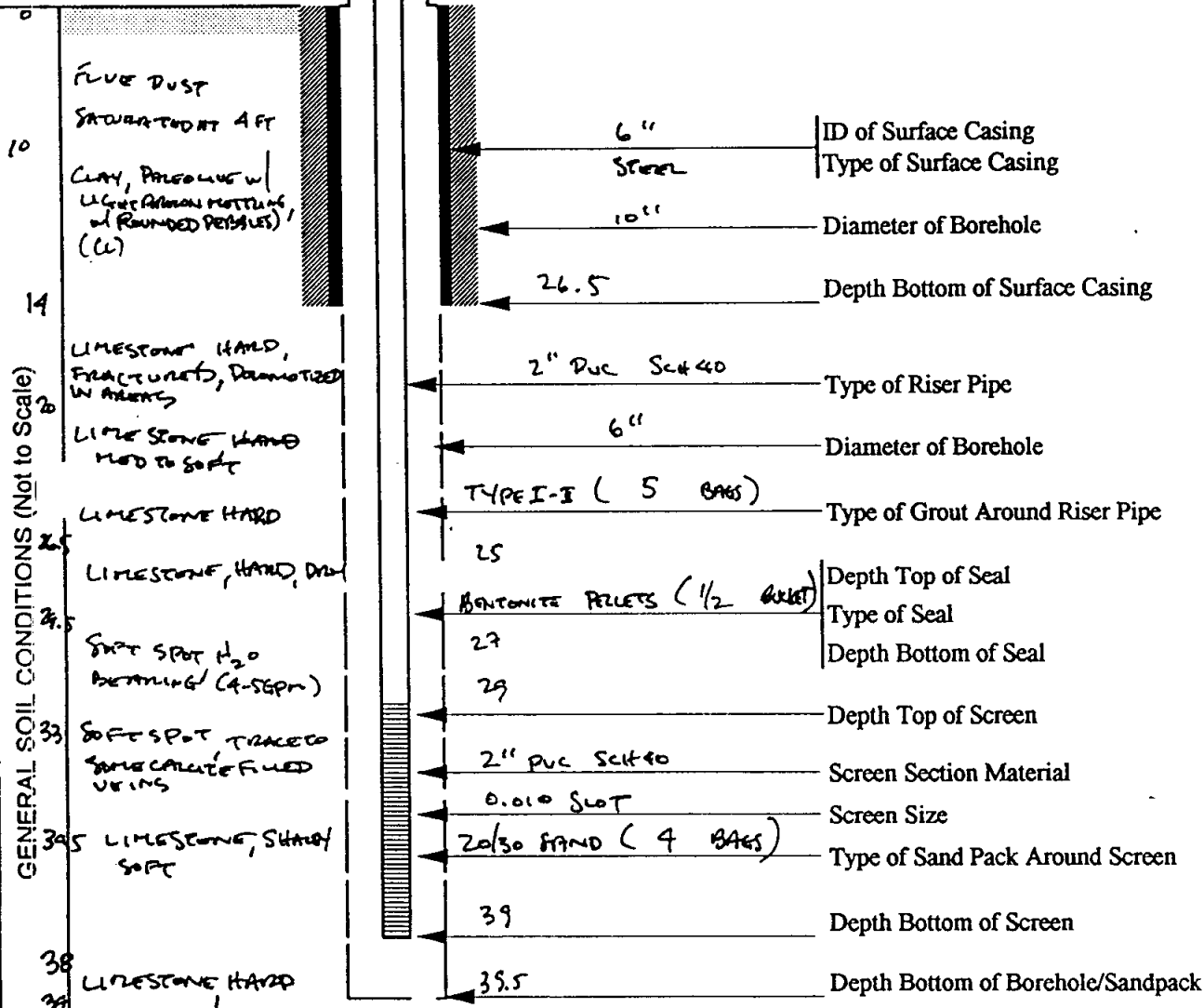
000178 JD 12/19/97

# GROUNDWATER PIEZOMETER REPORT

Client	Sloss Industries	Site Location	Birmingham, Alabama	Well/Piezometer No. <u>MW-33</u>
Well Location	<u>1/2 WAY BETWEEN HW-32 &amp; 35 ON WEST SIDE OF ROAD</u>			
Project No.	<u>TF0320.015</u>			
Contractor	Graves Service Company Inc.	Driller(s)	<u>Jordan</u>	
Drilling Method(s)	Hollow Stem Auger/Air Rotary	Helper(s)		
Prepared By	Joe Hughes	Date(s) Installed	<u>8/18/97 to 8/11/97</u>	SWMU Area <u>LD</u>
				SWMU <u>39</u>

Survey Datum 556.73 ftms

Ground Elevation



REMARKS:

**GERAGHTY & MILLER, INC.**  
Environmental Services

# GROUNDWATER PIEZOMETER REPORT

Client Sloss Industries  
 Location Birmingham, Alabama  
 Project No. TF0320.013  
 Contractor GRAVES SERVICES Driller(s) JOHN MITCHELL  
 Drilling Method(s) AIR HAMMER Helper(s) J.B. / DWIGHT  
 Prepared By J. KIRKPATRICK Date(s) Installed JUNE 26 1995

Mw-345  
 Boring No. P-65  
 (14) 12/19/97

Survey  
 Datum 545.98 ft amsl

(K) 2/6/96  
 Ground  
543.84 ft amsl Elevation

GENERAL SOIL CONDITIONS (Scale)

CLAY

11.25

L.S. Broken,  
 Soft

15.0

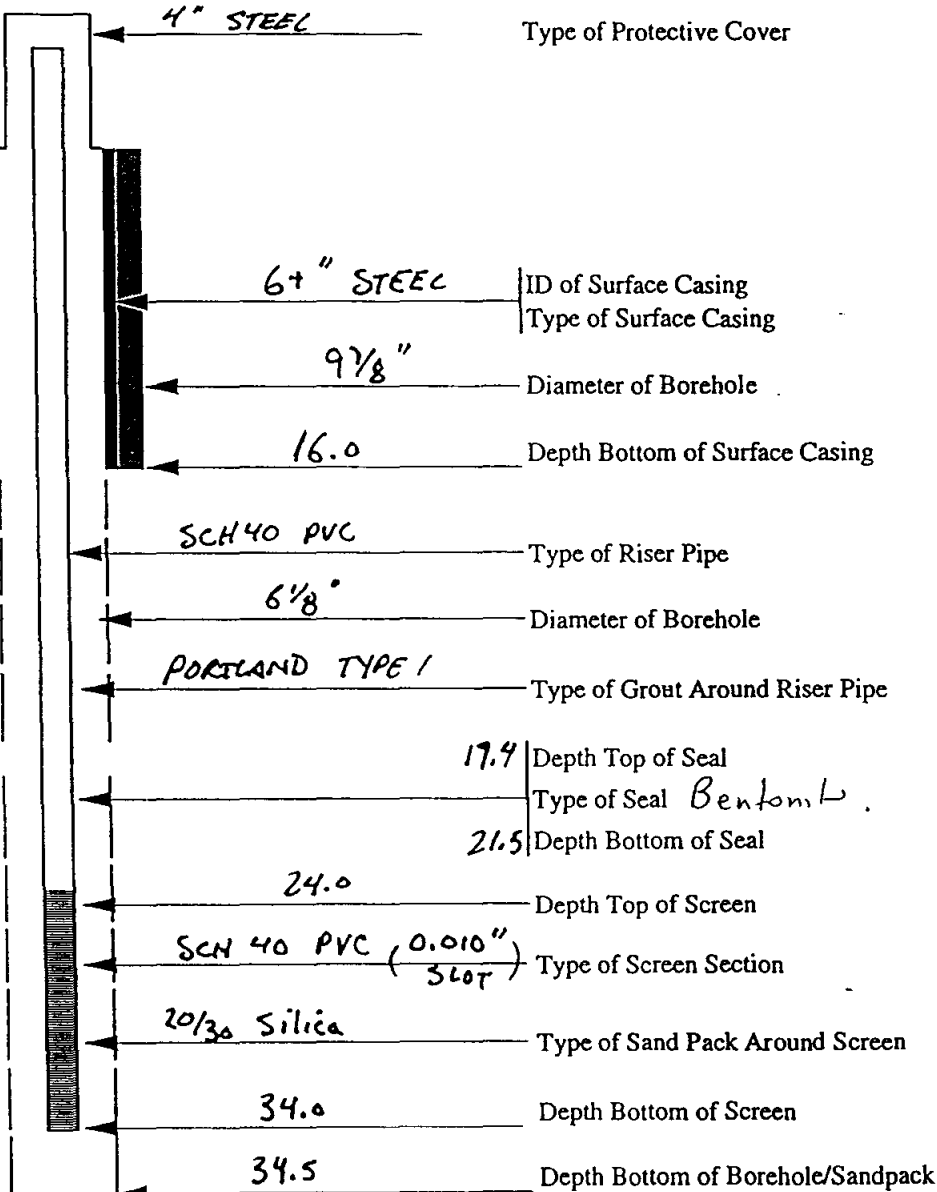
L.S. hard,  
 gray, fine  
 grained

29.5

\* L.S. - water zone

30.25

L.S. Hard, gray



## REMARKS:

\* water zone

GERAGHTY  
 & MILLER, INC.  
 Environmental Services

000176 (14) 12/19/97



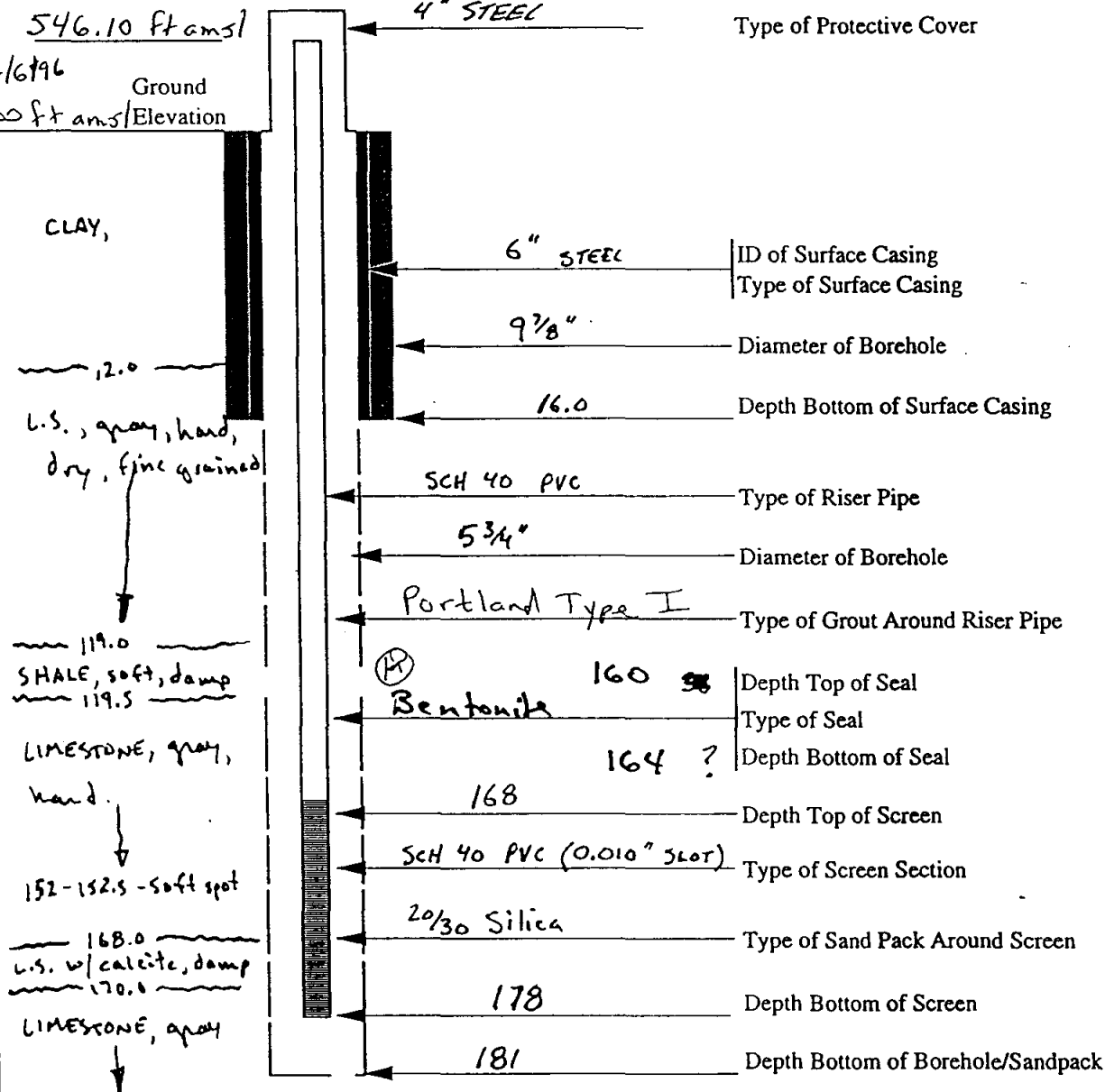
# GROUNDWATER PIEZOMETER REPORT

Client Sloss Industries  
 Location Birmingham, Alabama  
 Project No. TF0320.013  
 Contractor GRAVES SERVICE CO. Driller(s) JOHN MITCHELL  
 Logging Method(s) AIR HAMMER Helper(s) JB DWIGHT  
 Prepared By J. KIRKPATRICK Date(s) Installed JUNE 21 1995

Boring No. rw-34D  
P-6D  
JB 12/17/97

Survey Datum 546.10 ft amsl  
JB 2/6/96 Ground Elevation 544.00 ft amsl

GENERAL SOIL CONDITIONS (to Scale)



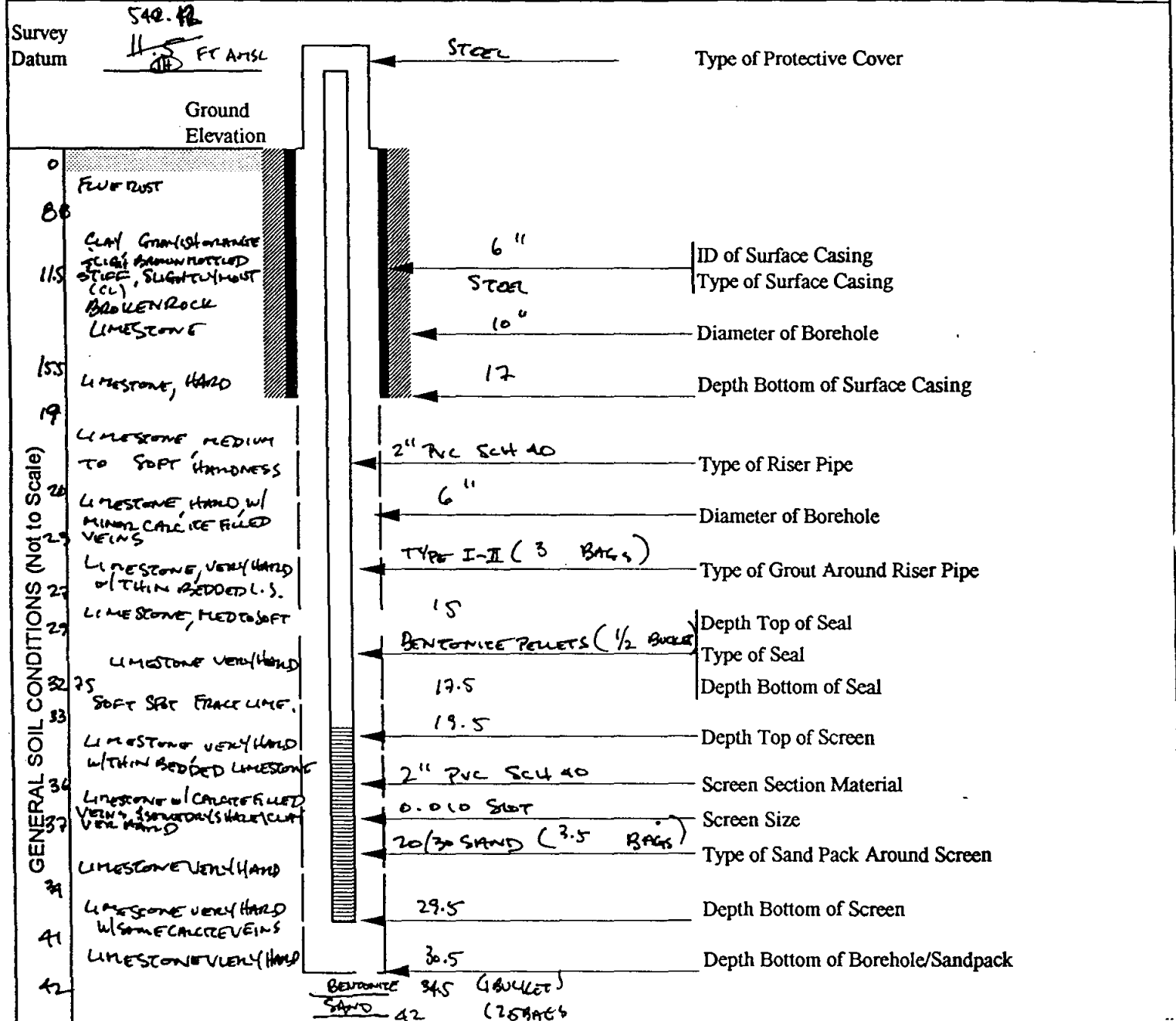
REMARKS: Took along time for sand to settle out through the viscous slough at bottom. Sand pushed the viscous slough up the borehole as it settled out. The bentonite bridged at the top of the slough at ~138 ft bbs. Bentonite was tagged at ~160 ft 6b on June 22, 1995. JB

**GERAGHTY & MILLER, INC.**  
 Environmental Services

000177 JB 12/17/97

# GROUNDWATER PIEZOMETER REPORT

Client	Sloss Industries	Site Location	Birmingham, Alabama	Well/Piezometer No. <u>HW-35</u>
Well Location	NARL PIPELINE 100 FT SOUTH NORTH OF ACCESS ROAD GAGE			
Project No.	TF0320.015			
Contractor	Graves Service Company Inc.	Driller(s)	JOHN MITCHELL	
Drilling Method(s)	Hollow Stem Auger/Air Rotary	Helper(s)	ALTON DWIGHT / RON	
Prepared By	Joe Hughes	Date(s) Installed	01/8/97 to 01/14/97	SWMU Area <u>LD</u>
				SWMU <u>39</u>



REMARKS:



# GROUNDWATER PIEZOMETER REPORT

Client Sloss Industries  
 Location Birmingham, Alabama  
 Project No. TF0320.013  
 Contractor GRAVES SERVICE CO. Driller(s) JOHN MITCHELL  
 Drilling Method(s) AIR HAMMER Helper(s) J.B. / DWIGHT  
 Prepared By J. KIRKPATRICK Date(s) Installed JUNE 23 1995

Boring No. P-5

17W-36

JW 12/19/97

Survey  
 Datum 532.43 ft amsl  
KT 2/6/96  
 Ground  
530.34 ft amsl Elevation

GENERAL SOIL CONDITIONS (Scale)

CLAY, yellowish  
 brown, wet

14.5

LIMESTONE,  
 gray, hard

4" STEEL

Type of Protective Cover

6" STEEL

ID of Surface Casing

Type of Surface Casing

9 7/8"

Diameter of Borehole

15.5

Depth Bottom of Surface Casing

SCH 40 PVC

Type of Riser Pipe

6 1/8"

Diameter of Borehole

PORTLAND TYPE 1

Type of Grout Around Riser Pipe

Bentonite

122.1

Depth Top of Seal

Type of Seal

124.5

Depth Bottom of Seal

126.5

Depth Top of Screen

SCH 40 PVC 0.010" SLOT  
 (#10)

Type of Screen Section

20/30 Silica Sand

Type of Sand Pack Around Screen

136.5

Depth Bottom of Screen

137.0

Depth Bottom of Borehole/Sandpack

## REMARKS:

\* water zone

**GERAGHTY  
 & MILLER, INC.**  
 Environmental Services

000175 JW 12/19/97

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# GROUNDWATER PIEZOMETER REPORT

Client Sloss Industries Site Location Birmingham, Alabama  
 Well Location AT NE END OF SWMU  
 Project No. TF0320.015  
 Contractor Graves Service Company Inc. Driller(s) John Mitchell  
 Drilling Method(s) Hollow Stem Auger/Air Rotary Helper(s) Ron, Anton, Dwight  
 Prepared By Joe Hughes Date(s) Installed 8/8/97 to 8/11/97

Well/Piezometer No. Mw-37

SWMU Area LD

SWMU 38

Survey  
Datum Tol 537-44

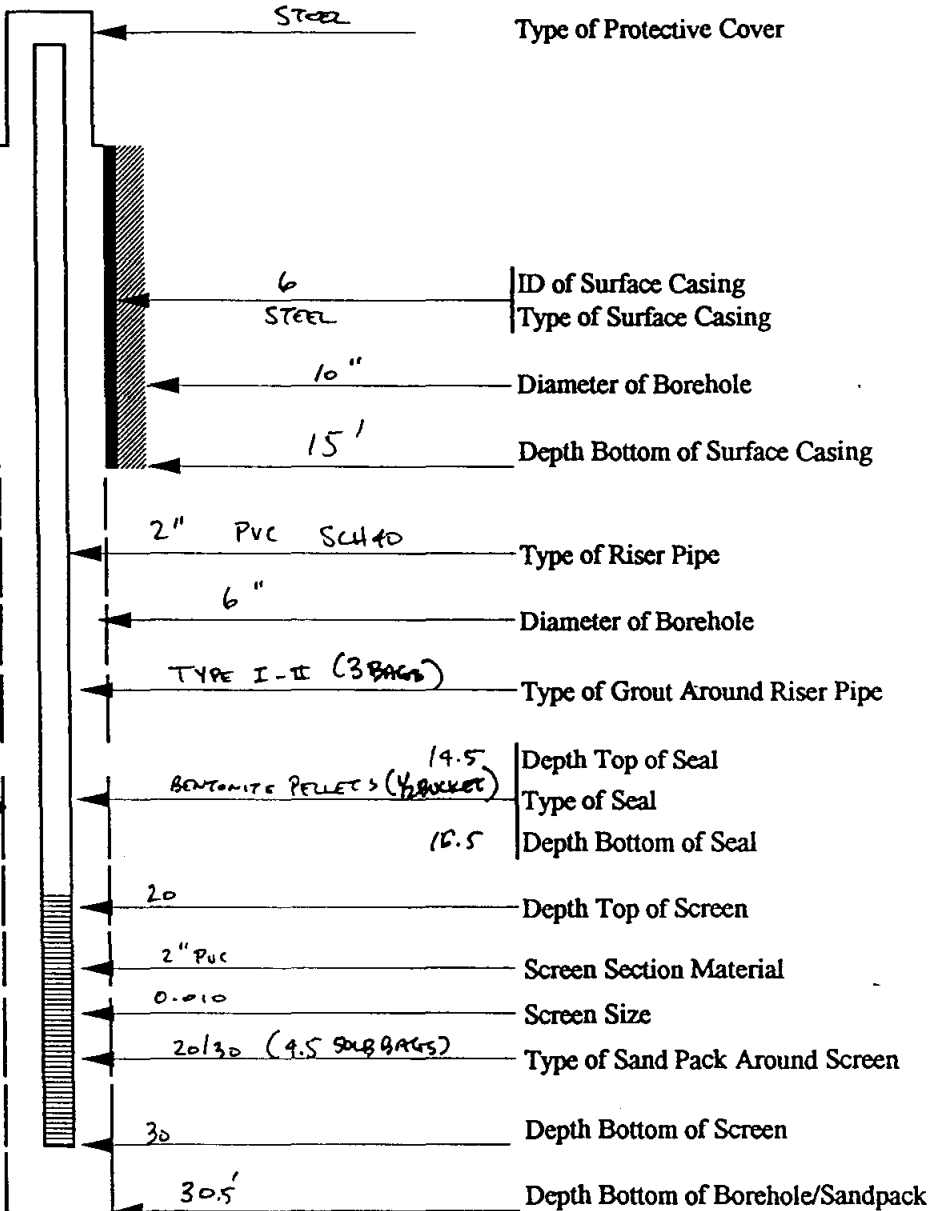
Ground  
Elevation

GENERAL SOIL CONDITIONS (Not to Scale)

STEEL

Type of Protective Cover

0' COKE  
 CLAY, light brown  
 w/ pale olive mottling  
 stiff moist  
 (CL)  
 10.5' FRACTURED LIMESTONE  
 11.5' LIMESTONE, HARD  
 12.75' LIMESTONE, FRACTURED  
 13.75' LIMESTONE, HARD  
 18.25' CALCITE FILLED FRACTURE  
 LIMESTONE, FRACTURED  
 MAKES (15-20 GPM)  
 19.25' LIMESTONE, SOFT, FRAG  
 LESS CALCITE  
 21' LIMESTONE, MODERATELY  
 23.5' LIMESTONE, HARD  
 SOFT AT 25' ± 29'  
 30'



REMARKS:

**GERAGHTY  
& MILLER, INC.**  
 Environmental Services

**VOLUME I**

**APPENDIX A.6**

**WELL DEVELOPMENT LOGS**



## WELL DEVELOPMENT SUMMARY

Project Name/No. Sloss Industries TF0320.015 Well: MW-21  
Location: Birmingham, Alabama Site ID: SWMU-23  
Client: Sloss Industries Prepared by: J.H. Gates

### Method/Equipment:

Static DTW 14.93 TD 41.88 Pumping DTW \_\_\_\_\_ (ft below MP)

Pumping Rate \_\_\_\_\_ gpm Pumping Duration: \_\_\_\_\_

Specific Capacity \_\_\_\_\_ gpm/ft  $Q = \pm 1.5 \text{ GPM}$

Water Removed During Development 40 gallons

### Water Quality and Observations

Date	Time	pH	SC	Temperature °C	Visual/ Turbidity	DO	Gallons Pumped
9/5/97	940	7.56	1.05	20	Turbid 200	1.3/L	20
	1030	7.71	1.02	22	Turbid 200	5.2	30
	1100	8.05	1.05	24	Turbid 200	7.5	35
	1125	7.99	1.03	24	Turbid 200	7.2	32.5
	1150	7.85	1.01	24	25.5	7.2	40.0

### Sample

Date	Time	pH	SC	Temperature °C	Visual/ Turbidity	DO	Gallons Pumped
------	------	----	----	-------------------	----------------------	----	-------------------

Remarks: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## WELL DEVELOPMENT SUMMARY

Project Name/No. Sloss Industries TF0320.013 Well: Mw-22 Ju 12/15/97  
 Location: Birmingham, Alabama Site ID: P-31  
 Client: Sloss Industries Prepared by: J. KIRKPATRICK

Method/Equipment:

TOTAL DEPTH - ~121 ft bTOC

1 volume = 6.6 gallons

5 Volumes = 33 gallons

Static DTW 94.17 Pumping DTW ~110 (ft below MP)Pumping Rate 1 1/4 to 1 1/2 gpm Pumping Duration: ~4 hours

→ + 225 gal.

Specific Capacity NA gpm/ftWater Removed During Development 275 gallons

STARTED - 1115

8/11/95

## Water Quality and Observations

Date	Time	pH	SC	Temperature °C	Visual/Turbidity	DO	Gallons Pumped
8/12/95	1200	6.71	520	21	10	2.44	55
8/14/95	2100	6.72	490	19	50	2.45	65
8/14/95	2135	6.90	390	19	50	3.00	110
8/14/95	2150	6.74	420	19	10	2.66	140
8/14/95	2210	6.74	490	19	10	2.40	165
8/14/95	2230	6.76	500	19	5	2.74	195
8/14/95	2250	6.77	450	19	5	2.41	220
8/15/95	0820	6.70	550	19	10	3.14	243
8/15/95	0845	6.73	490	19	5	3.01	275

WATER LEVEL

STAPPED PUMPING

STARTED PUMPING 0811

## Sample

Date	Time	pH	SC	Temperature °C	Visual/Turbidity	DO	Gallons Pumped
------	------	----	----	----------------	------------------	----	----------------

Remarks:

VOLUME  
CALC.  
→

121.00  
94.17  
26.83

26.8

.16

16.08

2680

2680

6.6

5

330

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Ju 12/15/97  
000313

## WELL DEVELOPMENT SUMMARY

Project Name/No. Sloss Industries TF0320.013  
Location: Birmingham, Alabama  
Client: Sloss Industries

Well: P30 rw-23 JD 12/19/97  
Site ID

Prepared by: J. KIRKPATRICK

Method/Equipment:

**TOTAL DEPTH - 81.8**

1 Volume - 7.4 gallons  
5 Volumes - 37 gallons

Static DTW 35.19 Pumping DTW NA (ft below MP)

Pumping Rate NA gpm

Pumping Duration: Pumped dry repeatedly

Specific Capacity NA gpm/ft

Water Removed During Development 52 gallons

**SPEC CAP.**

1 min. - 40.1  
10 min. - 56.2

WATER  
LEVEL  
AFTER  
RECOVERY

STARTED: 1215

8/10/95

### Water Quality and Observations

Date	Time	pH	SC	Temperature °C	Visual/Turbidity	DO	Gallons Pumped
8/9/95	1235	5.54	160	22	>1000	0.96	15
8/10/95	1300	5.77	160	22	>100	1.60	22
8/11/95	1330	5.55	150	21	>100	1.62	35
8/13/95	1335	5.63	170	22	>100	1.36	45
8/13/95	1355	5.57	140	22	>100	1.43	52

WATER  
LEVEL

went dry  
37.  
37.7

### Sample

Date	Time	pH	SC	Temperature °C	Visual/Turbidity	DO	Gallons Pumped
------	------	----	----	----------------	------------------	----	----------------

Remarks:

VOLUME 81.80  
CACC. 35.19  
46.61

46.6  
.16  
2796  
4660  
2796

7.4  
5  
37.0

JD 12/19/97  
000312



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## WELL DEVELOPMENT SUMMARY

Project Name/No. Sloss Industries TF0320.013  
 Location: Birmingham, Alabama  
 Client: Sloss Industries

Well: P-205 <sup>MW-255</sup> JH 12/19/97  
 Site ID: \_\_\_\_\_  
 Prepared by: J. KIRKPATRICK

Method/Equipment: TOTAL DEPTH - 48.8 ft BTOC

Static DTW 22.45 Pumping DTW see below

Pumping Rate 1/2 to 1/4 gpm Pumping Duration: 2 hrs.  
rate is fluctuating

Specific Capacity NA gpm/ft

Water Removed During Development 90 gallons

1 Volume = 4.2 gallons  
 5 Volumes = 21.0 gallons +  
 (ft below MP) 7.5  
gallons

STARTED - 0945

### Water Quality and Observations

8-14-95

Date	Time	pH	SC	Temperature °C	Visual/Turbidity	DO	Gallons Pumped	WATER LEVEL
8-14-95	1015	6.92	710	24	50	1.25	20	41.2
8-14-95	1045	7.01	720	24	50	4.07	38	44.3
8-14-95	1115	6.96	730	24	40	3.48	55	42.3
8-14-95	1145	6.96	750	24	30	2.61	80	42.6
8-14-95	1220	6.92	740	24	30	2.78	90	42.1

### Sample

Date	Time	pH	SC	Temperature °C	Visual/Turbidity	DO	Gallons Pumped
------	------	----	----	----------------	------------------	----	----------------

Remarks: \_\_\_\_\_

48.80  
 22.45  
26.35

26.4  
 .14  
15.84  
 26.40  
17.24

1 Volume - 4.2

5  
21.0  
 000303 JH 12/19/97

## WELL DEVELOPMENT SUMMARY

Project Name/No. Sloss Industries TF0320.013 Well: P-28D Mw-25D JD 12/19/97  
 Location: Birmingham, Alabama Site ID \_\_\_\_\_  
 Client: Sloss Industries Prepared by: J. KIRKPATRICK

Method/Equipment: TOTAL DEPTH - 70.1 ft bTOC 1 Volume - 7.8 gallons  
 5 Volumes - 39 gallons, + 75 gal.

Static DTW 21.45 Pumping DTW NA (ft below MP)

Pumping Rate 1/2 to 1/4 gpm Pumping Duration: Pumped dry repeatedly

Specific Capacity NA gpm/ft

Water Removed During Development 50 gallons

SPEC. CAP.  
 1 min - 35.1  
 10 min - 61.1

STARTED - 0820

8-14-95

### Water Quality and Observations

Date	Time	pH	SC	Temperature °C	Visual/Turbidity	DO	Gallons Pumped		WATER LEVEL
8/14/95	0815	11.81	4360	25	>1000	3.88	12	pumped dry	~70
8/14/95	1900	11.61	2130	25	100	2.88	23	pumped dry	21.58
8/15/95	0930	11.49	1110	25	100	4.23	33	pumped dry	18.
8/15/95	1820	10.84	660	25	80	3.09	38		24.
8/15/95	1830	10.90	600	25	80	4.13	41	pumped dry	
8/16/95	1830	10.88	600	25	85	—	50	pumped dry	

SKIN WATER LEVEL AFTER RECHARGE

### Sample

Date	Time	pH	SC	Temperature °C	Visual/Turbidity	DO	Gallons Pumped
------	------	----	----	----------------	------------------	----	----------------

Remarks: \_\_\_\_\_

70.10  
 21.45  
 48.65

48.7  
 .16  
 29.22  
 48.70  
 48.62

7.89  
 5  
 39.0  
 000310  
 14 12/17/97

## WELL DEVELOPMENT SUMMARY

Project Name/No. Sloss Industries TF0320.013  
Location: Birmingham, Alabama  
Client: Sloss Industries

Well: P-27 TW-26 12/19/92  
Site ID: 5. HVG 165  
Prepared by: S. HVG 165

Method/Equipment: TOTAL DEPTH - 142 ft bToc

1 Volume - 8.22  
5 Volumes - 40 gallons  
(ft below MP)

Static DTW 90.65 Pumping DTW NA

Pumping Rate 1/2 to 1/4 to start gpm Pumping Duration: Pumped dry repeatedly or Bailed dry repeatedly  
Specific Capacity NA gpm/ft

Water Removed During Development 14 gallons

STARTED - 1020  
8-3-95

### Water Quality and Observations

DEPTH TO WATER  
AFTER RECHARGE

Date	Time	pH	SC	Temperature °C	Visual/Turbidity	DO	Gallons Pumped	
8/3	1035	8.59	980	25	>1000	1.50	8.6	
8/3/95	1115	8.53	1060	21	>1000	1.71	12	pumped dry
8/12/95	1600	8.60	1020	24	>1000	-	13	pumped dry
8/14/95	1500	8.04	1640	25	>1000	3.87	13.5	bailed dry
8/15/95	1400	7.97	1780	25	>1000	4.64	13.75	bailed dry
8/16/95	1500	8.06	1760	25	>1000	4.02	14.00	bailed dry

### Sample

Date	Time	pH	SC	Temperature °C	Visual/Turbidity	DO	Gallons Pumped

Remarks: Very slow recharge - will continue development w/ a bailer.  
(Shown on water)

142.00  
90.65  
51.35  
3084  
5140  
8224  
822 Volume  
000308 12/19/92

# WELL DEVELOPMENT SUMMARY

Project Name/No. Sloss Industries TF0320.013  
Location: Birmingham, Alabama  
Client: Sloss Industries

Well: W-27  
Site ID: P-26 J4 12/19/97  
Prepared by: J. KIRKPATRICK

Method/Equipment: TOTAL DEPTH - 39.4

1 Volume - 3.4  
5 Volumes - 17.5

Static DTW 17.75 Pumping DTW ~ 18 (see below) (ft below MP)

Pumping Rate 1 gpm Pumping Duration: 1 hour

Specific Capacity NA gpm/ft

Water Removed During Development 55 gallons

SPEC. CAPACITY:  
1 min - 18.40  
10 min - 18.20

STARTED: 1115

## Water Quality and Observations

Date	Time	pH	SC	Temperature °C	Visual/Turbidity	DO	Gallons Pumped	WATER LEVEL
8/9/95	1025	6.62	770	21	<10 NTU	0.72	10	18.21
8/9/95	1135	6.66	840	21	<10	0.84	25	18.12
8/9/95	1145	6.63	800	21	<10	0.72	32	18.16
8/9/95	1155	6.62	850	21	<10	0.80	43	18.16
8/9/95	1210	6.65	840	21	<10	0.56	55	18.16

reduced rate slightly

## Sample

Date	Time	pH	SC	Temperature °C	Visual/Turbidity	DO	Gallons Pumped
------	------	----	----	----------------	------------------	----	----------------

Remarks: NO WATER ADDED DURING DRILLING

VOLUME 39.40 21.6 3.5  
CALC. 17.75 .16  
21.65 12.96  
21.60 17.5

000307 12/19/97



## WELL DEVELOPMENT SUMMARY

Project Name/No. Sloss Industries TF0320.013Well: P-25 MW-28 14/12/17Location: Birmingham, Alabama

Site ID

Client: Sloss IndustriesPrepared by: J. Hughes

Method/Equipment:

Static DTW 19.98 Pumping DTW 25.80 (1 MIN) 28.29 (10 MIN) 28.52 (20 MIN) 28.71 (35 MIN)  
(ft below MP) SDGALPumping Rate ~ 1 1/2 gpmPumping Duration: 1.25 hrSpecific Capacity NA gpm/ftWater Removed During Development 55 gallonsWater Quality and Observations

Date	Time	pH	SC	Temperature °C	Visual/ Turbidity	DO	Gallons Pumped
7/20/15		6.94	610	25	3.06	3.34	10
		6.94	630	25	2.04	3.04	20
		6.99	630	25	1.41	2.86	43
		6.96	510	25	1.57	2.42	55

Sample

Date	Time	pH	SC	Temperature °C	Visual/ Turbidity	DO	Gallons Pumped

Remarks: No drilling water added.





Project Name/No. Sloss Industries TF0320.013  
Location: Birmingham, Alabama  
Client: Sloss Industries

Well: P-245 MW-30 S JA 12/19/97  
 Site ID \_\_\_\_\_  
 Prepared by: J. HERTZ

Method/Equipment:

Static DTW 25.56 Pumping DTW 27.01 (14 MIN) 27.10 (10 MIN) 21.17 (20 MIN)  
(ft below MP) (4862 IN 28 MIN)

Pumping Rate ~1 gpm      Pumping Duration: 1 hr

Specific Capacity NA gpm/ft

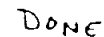
Water Removed During Development 55 gallons

[illegible]

Date	Time	pH	SC	Temperature °C	Visual/ Turbidity	DO	Gallons Pumped
------	------	----	----	-------------------	----------------------	----	-------------------

Remarks: No drilling water added.





Well: ~~P-240~~ Mw-300 Ju 12/19/97

Site ID

Prepared by: J. Huertas

Static DTW 2485

Pumping DTW 29.70 (14.4)

33.51 (10 MIN) 33.95 (30 MIN)  
(ft below MP) 33.95 (38 MIN)

Pumping Rate  $\sim \frac{1}{2}$  gpm

Pumping Duration: 2

Specific Capacity                      NA                      gpm/ft

Water Removed During Development	55	gallons
----------------------------------	----	---------

[illegible]

Date	Time	pH	SC	Temperature °C	Visual/ Turbidity	DO	Gallons Pumped
------	------	----	----	-------------------	----------------------	----	-------------------

Remarks: No water added during drilling.

~~000305~~ 24 12/19/97



## WELL DEVELOPMENT SUMMARY

Project Name/No. Sloss Industries TF0320.015 Well: rw-31  
 Location: Birmingham, Alabama Site ID: Summary  
 Client: Sloss Industries Prepared by: J. H. G. H.

### Method/Equipment:

Static DTW 19.92 Pumping DTW 49.27 (ft below MP)  
 Pumping Rate \_\_\_\_\_ gpm Pumping Duration: \_\_\_\_\_  
 Specific Capacity \_\_\_\_\_ gpm/ft  
 Water Removed During Development 55 gallons

### Water Quality and Observations

Date	Time	pH	SC	Temperature °C	Visual/ Turbidity	DO	Gallons Pumped	
8/15/97	1555	7.33	0.62	25	98.3*	2.7	20	
	1605	7.37	0.57	26	105.4*	2.0	25	Gpm 10.5
	1615	7.39	0.60	26	10.5	1.7	30	"
	1620	7.58	0.62	24	3.1	3.0	35	IN GPM 10.5
	1630	7.43	0.58	26	2.3	1.7	40	"
	1635	7.62	0.62	25	139.9*	2.2	45	Gpm 10.5
	1645	7.63	0.62	25	28.6* GPM	1.7	47.5	"
	1650	7.62	0.61	24	5.6	1.6	50	GPM 10.5
	1655	7.62	0.58	24	4.3	1.4	52.5	"
	1700	7.63	0.62	24	4.1	1.2	56	"

### Sample

Date	Time	pH	SC	Temperature °C	Visual/ Turbidity	DO	Gallons Pumped

Remarks: \* METAL MEASUREMENT



## WELL DEVELOPMENT SUMMARY

Project Name/No. Sloss Industries TF0320.013 Well: P-7 MW-32 14 12/19/97  
 Location: Birmingham, Alabama Site ID: \_\_\_\_\_  
 Client: Sloss Industries Prepared by: J. K. KRYATKID

Method/Equipment: TOTAL DEPTH - 49.9 BTAC 1 Volume = 5 gal.  
5 Volume = 25 gal.  
 Static DTW 18.64 Pumping DTW 24.8 (ft below MP)  
 Pumping Rate 1/2 to 3/4 gpm Pumping Duration: 2 hrs.  
 Specific Capacity NA gpm/ft  
 Water Removed During Development 55 gallons

SPEC. CAP.  
 1 min - 28.90  
 10 min - 34.55

STARTED: 1430

### Water Quality and Observations

Date	Time	pH	SC	Temperature °C	Visual/Turbidity	DO	Gallons Pumped
8/8	1440	6.72	1970	25	5.4	1.21	8
8/8	1455	6.63	2040	24.5	5.4	1.33	18
8/8	1517	6.61	2070	24	3.0	1.02	24
8/8	1535	6.62	2060	23	0.7	0.96	35
8/8	1610	6.65	2030	23	0.8	1.00	50 46
8/8	1625	6.66	2040	23	0.9	1.02	55

### Sample

Date	Time	pH	SC	Temperature °C	Visual/Turbidity	DO	Gallons Pumped

Remarks: No water added during drilling.

49.90      31.3      5.0  
 18.64      .16      5  
 31.26      1879      25.0 Gallons.  
             3130  
             5008

14 12/19/97  
000285

## WELL DEVELOPMENT SUMMARY

Project Name/No. Sloss Industries TF0320.015 Well: Mw-33  
 Location: Birmingham, Alabama Site ID: SWMS039  
 Client: Sloss Industries Prepared by: J. H. H. H.

### Method/Equipment:

Static DTW 7.96 11.40 Pumping DTW 31.86 (ft below MP)  
 Pumping Rate 1.37 gpm Pumping Duration: 1.25 Hr  
 Specific Capacity \_\_\_\_\_ gpm/ft  
 Water Removed During Development 110 gallons

### Water Quality and Observations

Date	Time	pH	SC	Temperature °C	Visual/ Turbidity	DO	Gallons Pumped
8/16/97	915	6.43	0.87	23	2.63	1.7	20
	935	6.80	0.77	23	4.2	1.1	40
	950	6.83	0.88	23	6.1	3.3	55
	1005	6.95	0.93	23	22.9	1.3	75
	1020	6.48	0.96	23	30.7	2.2	95
	1030	6.51	0.92	23	6.6	3.5	105
	1035	6.29	0.93	23		2.2	110

1.37  
 80 110  
 80  
 300  
 240  
 600  
 860

### Sample

Date	Time	pH	SC	Temperature °C	Visual/ Turbidity	DO	Gallons Pumped

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



# WELL DEVELOPMENT SUMMARY

Project Name/No. Sloss Industries TF0320.013  
 Location: Birmingham, Alabama  
 Client: Sloss Industries

Well: P-65-rw-345 (J4) 12/19/92  
 Site ID: \_\_\_\_\_  
 Prepared by: J. KIRKPATRICK

Method/Equipment: TOTAL DEPTH - 36.4

Static DTW 7.81 Pumping DTW 2.35 (ft below MP)

Pumping Rate 1 1/4 gpm Pumping Duration: 1.25 hrs.

Specific Capacity NA gpm/ft

Water Removed During Development 110 gallons

SPEC. CAP.  
 1 min - 11.05  
 10 min - 14.91

1 Volume = 9.5 gallons  
 5 Volumes = 47.5 gallons.

47.5 GAL

STARTED : 1200

## Water Quality and Observations

Date	Time	pH	SC	Temperature °C	Visual/ Turbidity	mg/L DO	Gallons Pumped
8/8	1213	6.53	1640	22	10	1.06	18
8/8	1226	6.51	1650	22	10	0.96	31
8/8	1237	6.50	1630	24	10	1.18	46
8/8	1249	6.51	1630	22	10	0.82	65
8/8	1302	6.51	1640	22	10	0.80	82
8/8	1318	6.51	1640	22	10	0.83	110

← increase rate 1 2 gpm

## Sample

Date	Time	pH	SC	Temperature °C	Visual/ Turbidity	DO	Gallons Pumped
------	------	----	----	----------------	----------------------	----	-------------------

Remarks: No water added during drilling.

36.40  
 7.81  
 28.59

28.6  
 .16  
 1716  
 2860  
 9.576

2  
 9.5  
 5  
 475

(J4) 12/19/92  
 000283

## WELL DEVELOPMENT SUMMARY

Project Name/No. Sloss Industries TF0320.013  
Location: Birmingham, Alabama  
Client: Sloss Industries

Well: P6D MW-34D (JH) 12/19/87  
Site ID: \_\_\_\_\_

Prepared by: J. KIRKPATRICK

Method/Equipment:

TOTAL DEPTH - ~182'

1 Volume = 11 gallons

5 Volumes = 55 gallons

Static DTW 111.2 Pumping DTW see below (ft below MP)

Pumping Rate 1/2 to 1/4 gpm  
rate ↓ as depth ↑

Pumping Duration: pumped/bailed dry repeatedly

Specific Capacity NA gpm/ft

Water Removed During Development 25 gallons

STARTED - 1255

8-12-95

### Water Quality and Observations

Date	Time	pH	SC	Temperature °C	Visual/Turbidity	DO	Gallons Pumped
8/12/95	1525	8.20	1210	24	50	0.43	16
8/13/95	1630	7.96	1330	22	>100	1.83	21
8/13/95	1640	7.84	1420	22	>100	2.34	22 bailed dry
8/14/95	1445	7.88	1340	22	>100		23 "
8/15/95	1345	7.85	1210	24	>100	5.29	24 "
8/16/95	1200	8.04	1280	24	>100	—	25 "

INITIAL WATER LEVEL  
AFTER RECHARGE  
at 1/4 gen  
pumped dn

161.5

176.0

176.30

### Sample

Date	Time	pH	SC	Temperature °C	Visual/Turbidity	DO	Gallons Pumped
------	------	----	----	----------------	------------------	----	----------------

Remarks: 8/12/95 pumped dry (16 gallons) 8/13/95 bailed dry (6 gallons)  
8/14/95 Bailed dry (3/4 gallon) 8/15/95 Pumped dry (16 gallons)

35.1

14.6

000281

JH 12/15/92

## WELL DEVELOPMENT SUMMARY

Project Name/No. Sloss Industries TF0320.015 Well: rw-35  
 Location: Birmingham, Alabama Site ID: SWW23  
 Client: Sloss Industries Prepared by: J. Weden

**Method/Equipment:**

Static DTW 6.50 <sup>TD</sup> 32.30 Pumping DTW \_\_\_\_\_ (ft below MP)  
 Pumping Rate \_\_\_\_\_ gpm Pumping Duration: \_\_\_\_\_  
 Specific Capacity \_\_\_\_\_ gpm/ft  
 Water Removed During Development \_\_\_\_\_ gallons

### Water Quality and Observations

Date	Time	pH	SC	Temperature °C	Visual/ Turbidity	DO	Gallons Pumped	
8/16/97	18:05	6.97	1.86	24	> 200	6 mg/L	20 gal	
8/17/97		6.97	1.55	25	111.9	3 mg/L	3	BAILED DRY
8/17/97	19:25	6.61	1.65	22	110	6.2 mg/L	3	BAILED DRY
8/18/97	18:50	7.03	1.72	23	45	6.5 mg/L	2.5	BAILED DRY
8/19/97	15:40	7.04	1.69	21	6.5	6.0	1	BAILED DRY
							29.5	TOTAL

### Sample

Date	Time	pH	SC	Temperature °C	Visual/ Turbidity	DO	Gallons Pumped

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## WELL DEVELOPMENT SUMMARY

Project Name/No. Sloss Industries TF0320.013 Well: P-5 RW-36 JH 12/19/97  
Location: Birmingham, Alabama Site ID \_\_\_\_\_  
Client: Sloss Industries Prepared by: J. KIRKPATRICK

Method/Equipment: TOTAL DEPTH - 139' 1 Volume - 22.2 gallons.  
5 Volumes - 111 gallons.

Static DTW 0.0 (artesian) Pumping DTW See below (ft below MP)

Pumping Rate 1.5 gpm Pumping Duration: 2.5 hrs.

Specific Capacity NA gpm/ft

Water Removed During Development 155 gallons

**SPEC CAP.**

At ~4 gpm } 1 min - 8.2  
                  } 10 min - 45.2

STARTED - 1600

### Water Quality and Observations

Date	Time	pH	SC	Temperature °C	Visual/Turbidity	DO	Gallons Pumped	WATER LEVEL
8/9/95	1615	9.06	980	20.5	~100		33	
8/9/95	1640	9.04	950	21	~100	0.77	65	
8/9/95	1700	9.05	950	21	~100	0.54	85	51.5
8/9/95	1730	9.10	970	20.5	<100	1.02	97	50.2
8/9/95	1800	9.10	950	20.5	<100	0.50	135	Increased Rate to ~3 gpm
8/9/95	1815	9.10	970	20.5	<100	0.79	155	60.3

### Sample

Date	Time	pH	SC	Temperature °C	Visual/Turbidity	DO	Gallons Pumped
------	------	----	----	----------------	------------------	----	----------------

Remarks: ~250 gallons added during drilling so we will remove an additional 250 gallons.

139  
+ 16  
-----  
155

22.2  
x 5  
-----  
111.0

JH 12/19/97  
000282





**VOLUME I**  
**APPENDIX A.7**  
**WATER LEVEL MEASUREMENTS**

# MULTIPLE WELL MEASUREMENTS

Sloss Industries  
Birmingham, Alabama

Well Number	Date	Time	Depth to Product	Depth to Water	Remarks
P-1S	8/12/97	1120		16.60	
P-1D	↑	1120		12.00	
P-2		1104		13.92	
P-3		1100		10.95	
P-4		1155		11.52	
P-5		1330		2.71 Atoc	
P-6S		1349		6.37	
P-6D		1350		5.69	
P-7		1340		16.84	
P-8		1343		7.57	
P-9		1405		162.54	
P-10		1410		12.50	
P-11		1413		6.44	
P-12		1415		6.14	
P-13S		1417		9.68	
P-13D		1418		114.83	
P-14		1430		9.11	
P-15		1425		5.79	
P-16		1232		5.52	
P-17		1220		5.06	
P-18		1236		11.05	
P-18S		1245		4.51	
P-19D		1240		4.25	
P-20		1247		82.15	
P-21		1258		121.41	
P-22		1300		10.56	
P-23		1305		17.02	
P-24S		21.17-1310		21.17	
P-24D		1310		20.67	
P-25		1317		16.51	
P-26		1335		16.09	
P-27		1333		85.48	
P-28S		1055		17.87	
P-28D		1055		17.17	
P-29		1053		12.97	
P-30		1050		12.97 31.98	
P-31		1045		93.62	
P-32		1255		5.62	
MW-5		1157			No Reading Wm
MW-6					
SG-1					Knocked over No Reading
SG-2		1112		1.12	
SG-3		1130		13.07	
SG-4	8/12/97	1143		0.96	

MW-21 1025 15.30  
MW-25 1315 20.55  
MW-21 1338 20.74  
MW-33 1345 8.18  
MW-35 1510 26.33  
MW-37 1505 3.89

W-36  
W-345  
W-340  
W-32

W-305  
W-300  
W-28  
W-27  
W-26  
W-255  
W-250  
W-24  
W-23  
W-22

10-28-97

**VOLUME I**  
**APPENDIX A.8**  
**GROUNDWATER SAMPLING LOGS**

## WATER SAMPLING LOG

Project Name/Number Sloss Industries / TF0320.015 Page 1 of 20

Site Location Birmingham, Alabama Site/Well No. rw-21

Sample I.D. 9708 18 -LD- 23-GW0021 Coded/  
Replicate No. \_\_\_\_\_ Date 8 / 18 / 97

Weather Sunny 90's Purge Begin 1305 Purge Ended 1400 Time Collected 1410

### EVACUATION DATA

Description of Measuring Point (MP) To C

Height of MP Above/Below Land Surface _____	MP Elevation _____
Total Sounded Depth of Well Below MP <u>41.88</u>	Water-Level Elevation _____
<u>41.88</u> <u>15.25</u> 33' Depth of Water Below MP <u>15.25</u>	Diameter of Casing <u>2"</u>
<u>26.63</u> Water Column in Well <u>26.63</u>	Total Purge Volume <u>25</u>
<u>26.63</u> Gallons per Foot <u>4.2608</u> $\times 5 = 21.30$	Sampling Pump Intake (feet below MP) <u>40.00</u>
<u>21.30</u> Gallons in Well <u>0.16</u>	

Evacuation Method 2" sub pump

### SAMPLING DATA/FIELD PARAMETERS

Color LT Brown Odor — Appearance STURMID Temperature 25/25/25°C

Specific Conductance (µmhos/cm) 1.34/1.26/1.32 pH 7.07/7.28/7.30 Dissolved Oxygen 6.0/7.4/7.6 mg/L

Turbidity >200/220/28.9 NTUs Eh \_\_\_\_\_ mV 106m/156m/25

Other \_\_\_\_\_

### CONTAINER DESCRIPTION

Constituents Sampled	From Lab <u>X</u> or G&M _____	Preservative
VOCs (8260)	3 40-ml vials	HCL
SVOCs (8270)	2 1-liter amber glass	None
Cyanide (9010)	1 1-quart, plastic	NaOH
Priority Pollutant Metals & Barium (6010)	500 ml plastic	HNO3
Mercury (7470)	500 ml glass	HNO3

Remarks \_\_\_\_\_

Sampling Personnel Joe Hughes, David Page

WELL CASING VOLUMES

GAL./FT.	1-1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-1/2" = 0.09	2-1/2" = 0.26	3-1/2" = 0.50	6" = 1.47

## WATER SAMPLING LOG

Project Name/Number Sloss Industries / TF0320.015 Page 2 of 20  
 Site Location Birmingham, Alabama Site/Well No. MW-22  
 Sample I.D. 970818 -LD-23 -GW0032 Coded/  
 Replicate No. ✓ Date 8 / 18 / 97  
 Weather SUNNY 90's Purge Begin 1125 Purge Ended 1200 Time Collected 1205

### EVACUATION DATA

Description of Measuring Point (MP) To C  
 Height of MP Above/Below Land Surface ± 2 MP Elevation \_\_\_\_\_  
 Total Sounded Depth of Well Below MP 128.00 Water-Level Elevation \_\_\_\_\_  
28.55 Depth of Water Below MP 93.45 Diameter of Casing 2"  
.16 Water Column in Well 28.55 Total Purge Volume 25  
128.30 Gallons per Foot 0.16 Sampling Pump Intake \_\_\_\_\_  
28.55 Gallons in Well 4.5680 (feet below MP) ± 105  
4.6680  
 Evacuation Method 2" SUB. PUMP

### SAMPLING DATA/FIELD PARAMETERS

Color Clear Odor - Appearance Clear Temperature 22/21/22/21 °C  
 Specific Conductance (µmhos/cm) 0.51/0.52/0.52/0.53 pH 6.86/6.85/6.88/6.89 Dissolved Oxygen 2.6/2.5/2.8/2.4 mg/L  
 Turbidity >200/11.06/10.10 NTUs Eh \_\_\_\_\_ mV 106mV/156mV/206mV  
 Other \_\_\_\_\_

### CONTAINER DESCRIPTION

Constituents Sampled	Lab <u>X</u> From or G&M _____	Preservative
VOCs (8260)	3 40-ml vials	HCL
SVOCs (8270)	2 1-liter amber glass	None
Cyanide (9010)	1 1-quart, plastic	NaOH
Priority Pollutant Metals & Barium (6010)	500 ml plastic	HNO3
Mercury (7470)	500 ml glass	HNO3

Remarks \_\_\_\_\_

Sampling Personnel Joe Hughes, David Page

WELL CASING VOLUMES				
GAL./FT.	1-1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-1/2" = 0.09	2-1/2" = 0.26	3-1/2" = 0.50	6" = 1.47

## WATER SAMPLING LOG

Project Name/Number Sloss Industries / TF0320.015 Page 3 of 20

Site Location Birmingham, Alabama Site/Well No. MW-23

Sample I.D. 970818 -LD-23 -GW0023 Coded/  
Replicate No. — Date 8 / 18 / 97

Weather Sunny 90's Purge Begin 1510 Purge Ended 1645 Time Collected 1655

### EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface	<u>±2.5</u>	MP Elevation	
2, Total Sounded Depth of Well Below MP	<u>81.8</u>	Water-Level Elevation	
<u>81.80</u> <u>32.05</u> <u>49.75</u> <u>.16</u> <u>8.50</u> <u>1.75</u> <u>5.00</u> <u>9.50</u>	<u>32.05</u>	Diameter of Casing	
Depth of Water Below MP	<u>49.75</u>	Total Purge Volume	
Water Column in Well	<u>0.14</u>	Sampling Pump Intake	
Gallons per Foot	<u>7.960 x 5 = 40</u>	(feet below MP)	<u>80</u>
Gallons in Well			

Evacuation Method 2" SUBMERSIBLE PUMP

### SAMPLING DATA/FIELD PARAMETERS

Color LT Yellow Odor — Appearance STANDARD Temperature 22/22/23/23C

Specific Conductance (µmhos/cm) 0.17/0.17/0.17/0.17 pH 5.70/5.70/5.70/5.70 Dissolved Oxygen 1.0/1.4/1.6/2.1 mg/L

Turbidity 2200/2200/56/22 NTUs Eh — mV 154m/225m/250m/40

Other —

### CONTAINER DESCRIPTION

Constituents Sampled	Lab	From <u>X</u> or G&M	Preservative
VOCs (8260)	3	40-ml vials	HCL
SVOCs (8270)	2	1-liter amber glass	None
Cyanide (9010)	1	1-quart, plastic	NaOH
Priority Pollutant Metals & Barium (6010)	500	ml plastic	HNO3
Mercury (7470)	500	ml glass	HNO3

Remarks WELL WENT DRY 2 TIMES DURING PUMPING

Sampling Personnel Joe Hughes, David Page

GAL./FT.	WELL CASING VOLUMES			
1-1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	
1-1/2" = 0.09	2-1/2" = 0.26	3-1/2" = 0.50	6" = 1.47	

## WATER SAMPLING LOG

Project Name/Number Sloss Industries / TF0320.015 Page 4 of 20

Site Location Birmingham, Alabama Site/Well No. FW-2d

Sample I.D. 9708 1B -LD-23 -GW 002d Coded/  
Replicate No. M5/M5D Date 8 / 18 / 97

Weather overcast Purge Begin 1740 Purge Ended 1840 Time Collected 1850

### EVACUATION DATA

Description of Measuring Point (MP) Toc

Height of MP Above/Below Land Surface	<u>32.5</u>	MP Elevation	
Total Sounded Depth of Well Below MP	<u>76.50</u>	Water-Level Elevation	
Depth of Water Below MP	<u>13.04</u>	Diameter of Casing	<u>2"</u>
Water Column in Well	<u>63.46</u>	Total Purge Volume	<u>30</u>
Gallons per Foot	<u>0.16</u>	Sampling Pump Intake	
Gallons in Well	<u>10.15 X 50.75</u>	(feet below MP)	<u>75</u>

Evacuation Method 2" submersible pump

### SAMPLING DATA/FIELD PARAMETERS

Color LT Green Odor - Appearance Turbid Temperature 22.1/21 °C

Specific Conductance (µmhos/cm) 0.31 / 0.29 / 0.29 pH 5.49 / 5.98 / 5.91 Dissolved Oxygen 1.3 / 2.3 mg/L

Turbidity 2200 / 200 / 2200 NTUs Eh 20 Gal / 25 / 25 mV

Other \_\_\_\_\_

### CONTAINER DESCRIPTION

Constituents Sampled	Lab <u>X</u> From or G&M	Preservative
VOCs (8260)	3 40-ml vials	HCL
SVOCs (8270)	2 1-liter amber glass	None
Cyanide (9010)	1 1-quart, plastic	NaOH
Priority Pollutant Metals & Barium (6010)	500 ml plastic	HNO3
Mercury (7470)	500 ml glass	HNO3

Remarks Pumped and 3 times

Sampling Personnel Joe Hughes, David Page

GAL./FT.	WELL CASING VOLUMES					
	1-1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65		
	1-1/2" = 0.09	2-1/2" = 0.26	3-1/2" = 0.50	6" = 1.47		



## WATER SAMPLING LOG

Project Name/Number Sloss Industries / TF0320.015 Page 5 of 20  
 Site Location Birmingham, Alabama Site/Well No. FW-258  
 Sample I.D. 970819 -LD- 23 -GW00258 Coded/  
 Replicate No. — Date 8/19/97  
 Weather Sunny 80° Purge Begin 1200 Purge Ended 1220 Time Collected 1225

### EVACUATION DATA

Description of Measuring Point (MP) TBC  
 Height of MP Above/Below Land Surface +2.5 MP Elevation             
 Total Sounded Depth of Well Below MP 48.80 Water-Level Elevation             

$$\begin{array}{r} 48.80 \\ 17.85 \\ \hline 30.95 \end{array}$$
 Depth of Water Below MP 17.85 Diameter of Casing 2"  
 Water Column in Well 30.95 Total Purge Volume             
 Gallons per Foot 0.16 Sampling Pump Intake             
 Gallons in Well 4.96 x 5.10 (feet below MP) 48  
 Evacuation Method 2" Submersible Pump

### SAMPLING DATA/FIELD PARAMETERS

Color Clear Odor — Appearance — Temperature 23/22/22 °C  
 Specific Conductance 0.74/0.73/0.70 pH 7.45/7.55/7.44 Dissolved Oxygen 2.8/1.6/1.5 mg/L  
 Turbidity 2.5/2.5 NTUs Eh            mV 5gal/10gal/15gal  
 Other           

### CONTAINER DESCRIPTION

Constituents Sampled	Lab <u>X</u> or G&M <u>          </u>	From <u>          </u>	Preservative <u>          </u>
VOCs (8260)	3	40-ml vials	HCL
SVOCs (8270)	2	1-liter amber glass	None
Cyanide (9010)	1	1-quart, plastic	NaOH
Priority Pollutant Metals & Barium (6010)	500	ml plastic	HNO3
Mercury (7470)	500	ml glass	HNO3

Remarks             
 Sampling Personnel Joe Hughes, David Page

GAL./FT.	WELL CASING VOLUMES				
	1-1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	
	1-1/2" = 0.09	2-1/2" = 0.26	3-1/2" = 0.50	6" = 1.47	

## WATER SAMPLING LOG

Project Name/Number Sloss Industries / TF0320.015 Page 6 of 20

Site Location Birmingham, Alabama Site/Well No. FW-25D

Sample I.D. 970819-LD-23-GW0025D Coded/ GUARDIAN SP-17  
Replicate No. 970819-LD-23-GW0025D Date 8/19/97

Weather OVERCAST 70's Purge Begin 920 Purge Ended 1000 Time Collected 1030

### EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface <u>52.5</u>	MP Elevation _____
Total Sounded Depth of Well Below MP <u>70.1</u>	Water-Level Elevation _____
Depth of Water Below MP <u>17.15</u>	Diameter of Casing <u>2"</u>
Water Column in Well <u>52.95</u>	Total Purge Volume _____
Gallons per Foot <u>8.48 x 5 = 42.40</u>	Sampling Pump Intake (feet below MP) <u>68</u>
Gallons in Well <u>0.16</u>	

Evacuation Method 2" SUBMERSIBLE PUMP

### SAMPLING DATA/FIELD PARAMETERS

Color CLEAR Odor - Appearance TURBID Temperature 22/24 °C

Specific Conductance (µmhos/cm) 0.45/1.00 pH 7.95 Dissolved Oxygen 2.1 mg/L

Turbidity >200 / >200 NTUs Eh \_\_\_\_\_ mV 156mV / 206mV

Other \_\_\_\_\_

### CONTAINER DESCRIPTION

Constituents Sampled	Lab <u>X</u> or G&M	Preservative
VOCs (8260)	3 40-ml vials	HCL
SVOCs (8270)	2 1-liter amber glass	None
Cyanide (9010)	1 1-quart, plastic	NaOH
Priority Pollutant Metals & Barium (6010)	500 ml plastic	HNO3
Mercury (7470)	500 ml glass	HNO3

Remarks 970819-LD-23-F0002 ; 970819-LD-23-E0002 COLLECTED PRIOR TO PURGE

Sampling Personnel Joe Hughes, David Page

GAL./FT.	WELL CASING VOLUMES					
	1-1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65		
	1-1/2" = 0.09	2-1/2" = 0.26	3-1/2" = 0.50	6" = 1.47		

## WATER SAMPLING LOG

Project Name/Number Sloss Industries / TF0320.015 Page 7 of 20

Site Location Birmingham, Alabama Site/Well No. MW-26

Sample I.D. 970820 -LD-38 -GW0026 Coded/Replicate No. - Date 8/20/97

Weather overcast 70's Purge Begin 920 Purge Ended 930 Time Collected 930

### EVACUATION DATA

Description of Measuring Point (MP) To C

Height of MP Above/Below Land Surface <u>+2.5</u>	MP Elevation _____
Total Squanded Depth of Well Below MP <u>142</u>	Water-Level Elevation _____
Depth of Water Below MP <u>85.40</u>	Diameter of Casing <u>2"</u>
Water Column in Well <u>56.60</u>	Total Purge Volume <u>5</u>
Gallons per Foot <u>0.16</u>	Sampling Pump Intake _____
Gallons in Well <u>9.1 x 5 = 46</u>	(feet below MP) _____

Evacuation Method 2" submersible pump

### SAMPLING DATA/FIELD PARAMETERS

Color Clear Odor Sulfur Appearance Shiny Temperature 22/20 °C

Specific Conductance 2.91 / 2.85 pH 7.79 / 7.83 Dissolved Oxygen 0.9 / 1.3 mg/L

Turbidity 1.55 / 720 NTUs Eh \_\_\_\_\_ mV

Other \_\_\_\_\_

### CONTAINER DESCRIPTION

Constituents Sampled	Lab <u>X</u> or G&M	From _____	Preservative
VOCs (8260)	3	40-ml vials	HCL
SVOCs (8270)	2	1-liter amber glass	None
Cyanide (9010)	1	1-quart, plastic	NaOH
Priority Pollutant Metals & Barium (6010)	500	ml plastic	HNO3
Mercury (7470)	500	ml glass	HNO3

Remarks Could not get any analytes out of vials due to effervescence caused by acid

Sampling Personnel Joe Hughes, David Page

GAL./FT.	1-1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-1/2" = 0.09	2-1/2" = 0.26	3-1/2" = 0.50	6" = 1.47



Weather	Hst 90's	Purge Begin	17:20	Purge Ended	17:45	Time Collected	17:50
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Evacuation Method 2" SUBMERGIBLE PUMP

Color NONE Odor NONE Appearance Clear Temperature 20 °C  
Specific Conductance (µmhos/cm) 0.84 pH 6.56 Dissolved Oxygen 1.8 mg/L  
Turbidity 1.97 NTUs Eh \_\_\_\_\_ mV  
Other \_\_\_\_\_

Constituents Sampled	Lab	From X or G&M	Preservative
VOCs (8260)	3	40-ml vials	HCL
SVOCs (8270)	2	1-liter amber glass	None
Cyanide (9010)	1	1-quart, plastic	NaOH
Priority Pollutant Metals & Barium (6010)	500	ml plastic	HNO3
Mercury (7470)	500	ml glass	HNO3

Remarks \_\_\_\_\_

Sampling Personnel Joe Hughes, David Page

		WELL CASING VOLUMES			
GAL./FT.	1-1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	
	1-1/2" = 0.09	2-1/2" = 0.26	3-1/2" = 0.50	6" = 1.47	



## WATER SAMPLING LOG

Project Name/Number Sloss Industries / TF0320.015 Page 10 of 20  
 Site Location Birmingham, Alabama Site/Well No. FW-29  
 Sample I.D. 970813 -LD-38 -GW 0029 Coded/  
 Replicate No. — Date 8 / 11 / 97  
 Weather Sunny 80's → 90's Purge Begin 1310 Purge Ended 1330 Time Collected 1330

### EVACUATION DATA

Description of Measuring Point (MP) Toc  
 Height of MP Above/Below Land Surface ±2.5 MP Elevation —  
 Total Sounded Depth of Well Below MP 30.85 Water-Level Elevation —  

$$\begin{array}{r} 30.85 \\ -20.55 \\ \hline 10.30 \end{array}$$
 Depth of Water Below MP 20.55 Diameter of Casing 2"  

$$\begin{array}{r} 10.30 \\ -1.05 \\ \hline 9.25 \end{array}$$
 Water Column in Well 10.20 Total Purge Volume 10  

$$\begin{array}{r} 9.25 \\ -0.16 \\ \hline 9.09 \end{array}$$
 Gallons per Foot 0.16 Sampling Pump Intake  

$$\begin{array}{r} 9.09 \\ \times 1.65 \\ \hline 15.09 \end{array}$$
 Gallons in Well 1.65 x 5 = 8.25 (feet below MP) 25  
 Evacuation Method 2" SUBMERGIBLE PUMP

### SAMPLING DATA/FIELD PARAMETERS

Color Clear Odor — Appearance — Temperature 24 °C  
 Specific Conductance (µmhos/cm) 0.63 pH 7.34 Dissolved Oxygen 1.1 mg/L  
 Turbidity 3.6 NTUs Eh — mV 100  
 Other —

### CONTAINER DESCRIPTION

Constituents Sampled	Lab	From X or G&M	Preservative
VOCs (8260)	3	40-ml vials	HCL
SVOCs (8270)	2	1-liter amber glass	None
Cyanide (9010)	1	1-quart, plastic	NaOH
Priority Pollutant Metals & Barium (6010)	500	ml plastic	HNO3
Mercury (7470)	500	ml glass	HNO3

Remarks —

Sampling Personnel Joe Hughes, David Page

WELL CASING VOLUMES					
GAL./FT.	1-1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	
	1-1/2" = 0.09	2-1/2" = 0.26	3-1/2" = 0.50	6" = 1.47	

## WATER SAMPLING LOG

Project Name/Number Sloss Industries / TF0320.015 Page 12 of 26

Site Location Birmingham, Alabama Site/Well No. Mw-305

Sample I.D. 970824 -LD-38 -GW-305 Coded/  
Replicate No. 970824-LD-38-GW-305 Date 8 / 21 / 97

Weather 80's SUNNY Purge Begin 1315 Purge Ended 1325 Time Collected 1330

### EVACUATION DATA

Description of Measuring Point (MP)		<u>TOT ±</u>	
Height of MP Above/Below Land Surface		<u>52.5</u>	MP Elevation _____
Total Sounded Depth of Well Below MP		<u>37.5</u>	Water-Level Elevation _____
<u>16.40</u> <u>1.16</u> <u>9820</u> <u>14400</u> <u>2.6240</u>	Depth of Water Below MP	<u>21.10</u>	Diameter of Casing <u>2"</u>
Water Column in Well		<u>16.40</u>	Total Purge Volume <u>15</u>
Gallons per Foot		<u>0.16</u>	Sampling Pump Intake <u>30</u>
Gallons in Well		<u>2.6 x 5 = 13</u>	(feet below MP) _____
Evacuation Method <u>2" submersible pump.</u>			

### SAMPLING DATA/FIELD PARAMETERS

Color Clear Odor — Appearance — Temperature 22 °C

Specific Conductance (µmhos/cm) 0.51 pH 6.64 Dissolved Oxygen 4.4 mg/L

Turbidity 10.1 NTUs Eh \_\_\_\_\_ mV

Other \_\_\_\_\_

### CONTAINER DESCRIPTION

Constituents Sampled	Lab	From <u>X</u> or G&M	Preservative
VOCs (8260)	3	40-ml vials	HCL
SVOCs (8270)	2	1-liter amber glass	None
Cyanide (9010)	1	1-quart, plastic	NaOH
Priority Pollutant Metals & Barium (6010)	500	ml plastic	HNO3
Mercury (7470)	500	ml glass	HNO3

Remarks \_\_\_\_\_

Sampling Personnel Joe Hughes, David Page

GAL./FT.	WELL CASING VOLUMES					
	1-1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65		
	1-1/2" = 0.09	2-1/2" = 0.26	3-1/2" = 0.50	6" = 1.47		

## WATER SAMPLING LOG

Project Name/Number Sloss Industries / TF0320.015 Page 11 of 20  
 Site Location Birmingham, Alabama Site/Well No. MW-30D  
 Sample I.D. 970821 -LD-38 -GW0030D Coded/Replicate No. — Date 8 / 21 / 97  
 Weather 80's Purge Begin 1415 Purge Ended 1455 Time Collected 1500

### EVACUATION DATA

Description of Measuring Point (MP) Toc  
 Height of MP Above/Below Land Surface +2.5 MP Elevation —  
 Total Sounded Depth of Well Below MP 61.5 Water-Level Elevation —  
 Depth of Water Below MP 20.65 Diameter of Casing 2"  
 Water Column in Well 40.85 Total Purge Volume 35  
 Gallons per Foot 0.16 Sampling Pump Intake (feet below MP) 55  
 Gallons in Well 6.5 x 5 = 32.5  
 Evacuation Method 2" submersible pump

### SAMPLING DATA/FIELD PARAMETERS

Color Clear Odor — Appearance — Temperature 21 °C  
 Specific Conductance (µmhos/cm) 0.55 pH 7.08 Dissolved Oxygen 2.1 mg/L  
 Turbidity 6.2 NTUs Eh — mV  
 Other —

### CONTAINER DESCRIPTION

Constituents Sampled	Lab <u>X</u> From <u>—</u> or <u>G&amp;M</u>	Preservative
VOCs (8260)	3 40-ml vials	HCL
SVOCs (8270)	2 1-liter amber glass	None
Cyanide (9010)	1 1-quart, plastic	NaOH
Priority Pollutant Metals & Barium (6010)	500 ml plastic	HNO3
Mercury (7470)	500 ml glass	HNO3

Remarks —  
 Sampling Personnel Joe Hughes, David Page

WELL CASING VOLUMES					
GAL./FT.	1-1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	
	1-1/2" = 0.09	2-1/2" = 0.26	3-1/2" = 0.50	6" = 1.47	





## WATER SAMPLING LOG

Project Name/Number Sloss Industries / TF0320.015 Page 14 of 28  
 Site Location Birmingham, Alabama Site/Well No. Tw-32  
 Sample I.D. 9708 21 -LD- 39 -GW 00 32 Coded/ Replicate No. — Date 8 / 21 / 97  
 Weather Sunny 80's Purge Begin 1105 Purge Ended 1140 Time Collected 1145

### EVACUATION DATA

Description of Measuring Point (MP) To c  
 Height of MP Above/Below Land Surface +2.5 MP Elevation             
 Total Sounded Depth of Well Below MP 49.9 Water-Level Elevation             
 Depth of Water Below MP 16.80 Diameter of Casing 2"  
 Water Column in Well 33.10 Total Purge Volume 30  
 Gallons per Foot 0.16 Sampling Pump Intake             
 Gallons in Well 5.3 x 5 = 26.5 (feet below MP) 25  
 Evacuation Method           

*Handwritten calculations:*  
 33.10  
 .16  
 19.840  
 33.100  
 52.940  
 5.3  
 26.5

### SAMPLING DATA/FIELD PARAMETERS

Color Clear Odor — Appearance Clear Temperature 24 °C  
 Specific Conductance (µmhos/cm) 0.45 pH 6.63 Dissolved Oxygen 3.7 mg/L  
 Turbidity 9.2 NTUs Eh            mV  
 Other           

### CONTAINER DESCRIPTION

Constituents Sampled	Lab <u>X</u> or G&M <u>          </u>	From <u>          </u>	Preservative
VOCs (8260)	3	40-ml vials	HCL
SVOCs (8270)	2	1-liter amber glass	None
Cyanide (9010)	1	1-quart, plastic	NaOH
Priority Pollutant Metals & Barium (6010)	500	ml plastic	HNO3
Mercury (7470)	500	ml glass	HNO3

Remarks             
 Sampling Personnel Joe Hughes, David Page

GAL./FT.	WELL CASING VOLUMES					
	1-1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65		
	1-1/2" = 0.09	2-1/2" = 0.26	3-1/2" = 0.50	6" = 1.47		

## WATER SAMPLING LOG

Project Name/Number Sloss Industries / TF0320.015 Page 15 of 20

Site Location Birmingham, Alabama Site/Well No. 17W-33

Sample I.D. 970820 -LD- 39 -GW0033 Coded/  
Replicate No. \_\_\_\_\_ Date 8 / 20 / 97

Weather Sunny 80's Purge Begin 1650 Purge Ended 1715 Time Collected 1720

### EVACUATION DATA

Description of Measuring Point (MP) TOL

Height of MP Above/Below Land Surface	<u>12.5</u>	MP Elevation	_____
Total Sounded Depth of Well Below MP	<u>41.40</u>	Water-Level Elevation	_____
Depth of Water Below MP	<u>8.15</u>	Diameter of Casing	<u>2"</u>
Water Column in Well	<u>33.25</u>	Total Purge Volume	<u>30</u>
Gallons per Foot	<u>0.16</u>	Sampling Pump Intake	_____
Gallons in Well	<u>5.33 x 5 = 27 Gall</u>	(feet below MP)	<u>15</u>

Evacuation Method 2" Submersible Pump

### SAMPLING DATA/FIELD PARAMETERS

Color Clear Odor — Appearance — Temperature 22 °C

Specific Conductance 1.14 (umhos/cm) pH 6.40 Dissolved Oxygen 2.8 mg/L

Turbidity 0.80 NTUs Eh \_\_\_\_\_ mV

Other \_\_\_\_\_

### CONTAINER DESCRIPTION

Constituents Sampled	Lab <u>X</u> or G&M _____	From _____	Preservative
VOCs (8260)	3	40-ml vials	HCL
SVOCs (8270)	2	1-liter amber glass	None
Cyanide (9010)	1	1-quart, plastic	NaOH
Priority Pollutant Metals & Barium (6010)	500	ml plastic	HNO3
Mercury (7470)	500	ml glass	HNO3

Remarks \_\_\_\_\_

Sampling Personnel Joe Hughes, David Page

WELL CASING VOLUMES					
GAL./FT.	1-1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	
	1-1/2" = 0.09	2-1/2" = 0.26	3-1/2" = 0.50	6" = 1.47	

## WATER SAMPLING LOG

Project Name/Number Sloss Industries / TF0320.015 Page 16 of 20

Site Location Birmingham, Alabama Site/Well No. rw-345

Sample I.D. 970820 -LD- 39 -GW00345 Coded/ Grand Ins Split  
Replicate No. 970820 -LD- 39 -GW00345 Date 8 / 20 / 97

Weather Overcast 80's breeze from light rain Purge Begin 1200 Purge Ended 1225 Time Collected 1230

### EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface ± 2.5 MP Elevation \_\_\_\_\_

Total Sounded Depth of Well Below MP 36.4 Water-Level Elevation \_\_\_\_\_

Depth of Water Below MP 6.35 Diameter of Casing 2"

Water Column in Well 30.05 Total Purge Volume 25

Gallons per Foot 0.16 Sampling Pump Intake \_\_\_\_\_

Gallons in Well 4.8 x 5 = 23 (feet below MP) \_\_\_\_\_

Evacuation Method 2" Submersible Pump

### SAMPLING DATA/FIELD PARAMETERS

Color Clear Odor — Appearance — Temperature 21 °C

Specific Conductance 1.49 pH 6.55 Dissolved Oxygen 1.2 mg/L

Turbidity 8.85 NTUs Eh \_\_\_\_\_ mV

Other \_\_\_\_\_

### CONTAINER DESCRIPTION

Constituents Sampled	Lab	From <u>X</u> or G&M	Preservative
VOCs (8260)	3	40-ml vials	HCL
SVOCs (8270)	2	1-liter amber glass	None
Cyanide (9010)	1	1-quart, plastic	NaOH
Priority Pollutant Metals & Barium (6010)	500	ml plastic	HNO3
Mercury (7470)	500	ml glass	HNO3

Remarks 970820 -LD- 39 -E30004 & 970820 -LD- 39 -E30004, 970820 -LD- 39 -E30005 / Grand Ins

Sampling Personnel Joe Hughes, David Page 970820 -LD- 39 -E30005

GAL./FT.	WELL CASING VOLUMES				
	1-1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	
	1-1/2" = 0.09	2-1/2" = 0.26	3-1/2" = 0.50	6" = 1.47	



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## WATER SAMPLING LOG

Project Name/Number Sloss Industries / TF0320.015 Page 17 of 20

Site Location Birmingham, Alabama Site/Well No. rw-34D

Sample I.D. 9708 24 -LD- 39 -GW00 34D Coded/  
Replicate No. — Date 8 / 24 / 97

Weather Purged & Sampled over Purge Begin 8/20/97 Purge Ended — Time Collected 1715  
2 days

### EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface	<u>+ 2.5</u>	MP Elevation	<u>—</u>
Total Sounded Depth of Well Below MP	<u>182</u>	Water-Level Elevation	<u>—</u>
Depth of Water Below MP	<u>5.65</u>	Diameter of Casing	<u>2"</u>
Water Column in Well	<u>174.35</u>	Total Purge Volume	<u>32</u>
Gallons per Foot	<u>0.16</u>	Sampling Pump Intake	<u>—</u>
Gallons in Well	<u>27.9 x 5 = 140</u>	(feet below MP)	<u>—</u>

Evacuation Method 2" SUBMERSIBLE PUMP

### SAMPLING DATA/FIELD PARAMETERS

Color Clear Odor — Appearance STANDARD Temperature 22/23 °C

Specific Conductance 1.15 / 1.16 pH 9.28 / 8.47 Dissolved Oxygen 1.0 / 2.2 mg/L

Turbidity 5.2 / >200 NTUs Eh — mV 30gal / 32

Other DTW 306m 176.1 /

### CONTAINER DESCRIPTION

Constituents Sampled	Lab <u>X</u> or G&M	From <u>—</u>	Preservative
VOCs (8260)	3	40-ml vials	HCL
SVOCs (8270)	2	1-liter amber glass	None
Cyanide (9010)	1	1-quart, plastic	NaOH
Priority Pollutant Metals & Barium (6010)	500	ml plastic	HNO3
Mercury (7470)	500	ml glass	HNO3

### Remarks

Sampling Personnel Joe Hughes, David Page

GAL./FT.	WELL CASING VOLUMES			
1-1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	
1-1/2" = 0.09	2-1/2" = 0.26	3-1/2" = 0.50	6" = 1.47	

## WATER SAMPLING LOG

Project Name/Number Sloss Industries / TF0320.015 Page 18 of 20

Site Location Birmingham, Alabama Site/Well No. rw-35

Sample I.D. 970821 -LD- 39 -GW0035 Coded/  
Replicate No. — Date 8/21/97

Weather 80's Purge Begin NA Purge Ended NA Time Collected 1530

### EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface <u>+2.5</u>	MP Elevation <u>                    </u>
Total Sounded Depth of Well Below MP <u>                    </u>	Water-Level Elevation <u>                    </u>
Depth of Water Below MP <u>                    </u>	Diameter of Casing <u>                    </u>
Water Column in Well <u>                    </u>	Total Purge Volume <u>                    </u>
Gallons per Foot <u>                    </u>	Sampling Pump Intake <u>                    </u>
Gallons in Well <u>                    </u>	(feet below MP) <u>                    </u>

Evacuation Method BALLED DOW STIMES ALLOWED TO RECHARGE FROM 8/20/97

### SAMPLING DATA/FIELD PARAMETERS

Color Clear Odor — Appearance — Temperature 22 °C

Specific Conductance 1.69 pH 7.47 Dissolved Oxygen 6.0 mg/L

(µmhos/cm)

Turbidity 5.7 NTUs Eh                      mV

Other                     

### CONTAINER DESCRIPTION

Constituents Sampled	Lab <u>X</u> or G&M <u>                    </u>	From <u>                    </u>	Preservative
VOCs (8260)	3	40-ml vials	HCL
SVOCs (8270)	2	1-liter amber glass	None
Cyanide (9010)	1	1-quart, plastic	NaOH
Priority Pollutant Metals & Barium (6010)	500	ml plastic	HNO3
Mercury (7470)	500	ml glass	HNO3

Remarks                     

Sampling Personnel Joe Hughes, David Page

GAL./FT.	WELL CASING VOLUMES				
	1-1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	
	1-1/2" = 0.09	2-1/2" = 0.26	3-1/2" = 0.50	6" = 1.47	

## WATER SAMPLING LOG

Project Name/Number Sloss Industries / TF0320.015 Page 19 of 20

Site Location Birmingham, Alabama Site/Well No. FW-36

Sample I.D. 970824 -LD- 39 -GW0036 Coded/  
Replicate No. — Date 8 / 21 / 97

Weather PURGED & SAMPLED OVER Purge Begin 9:00 Purge Ended 12:25 Time Collected 1240  
20445

### EVACUATION DATA

Description of Measuring Point (MP) <u>To C</u>		
Height of MP Above/Below Land Surface	<u>+2.5</u>	MP Elevation
Total Sounded Depth of Well Below MP	<u>139</u>	Water-Level Elevation
Depth of Water Below MP	<u>0</u>	Diameter of Casing <u>2"</u>
Water Column in Well	<u>135</u>	Total Purge Volume <u>75</u>
Gallons per Foot	<u>0.16</u>	Sampling Pump Intake
Gallons in Well	<u>22.24 x 5 = 112</u>	(feet below MP)

Evacuation Method NATURAL PURGE - ARTESIAN WELL

### SAMPLING DATA/FIELD PARAMETERS

Color LOAN Odor SULFUR Appearance — Temperature 22 / 22 22 °C

Specific Conductance (µmhos/cm) 0.99 / 1.01 / 1.01 pH 9.17 / 9.15 / 9.14 Dissolved Oxygen 1.7 / 1.6 / 1.2 mg/L

Turbidity 3.2 / 1.5 / 2.4 NTUs Eh — mV 206m / 306m

Other —

### CONTAINER DESCRIPTION

Constituents Sampled	Lab <u>X</u> From <u>or</u> G&M	Preservative
VOCs (8260)	3 40-ml vials	HCL
SVOCs (8270)	2 1-liter amber glass	None
Cyanide (9010)	1 1-quart, plastic	NaOH
Priority Pollutant Metals & Barium (6010)	500 ml plastic	HNO3
Mercury (7470)	500 ml glass	HNO3

Remarks —

Sampling Personnel Joe Hughes, David Page

GAL/FT.	WELL CASING VOLUMES			
	1-1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-1/2" = 0.09	2-1/2" = 0.26	3-1/2" = 0.50	6" = 1.47

## WATER SAMPLING LOG

Project Name/Number Sloss Industries / TF0320.015 Page 20 of 20

Site Location Birmingham, Alabama Site/Well No. MW-37

Sample I.D. 9708 21 -LD- 38 -GW 0037 Coded/Replicate No. — Date 8 / 21 / 97

Weather 80° Purge Begin 8:50 Purge Ended 9:05 Time Collected 9:10

### EVACUATION DATA

Description of Measuring Point (MP) Toc

Height of MP Above/Below Land Surface <u>+2.5</u>	MP Elevation <u>                    </u>
Total Sounded Depth of Well Below MP <u>30.20</u>	Water-Level Elevation <u>                    </u>
Depth of Water Below MP <u>3.80</u>	Diameter of Casing <u>2"</u>
Water Column in Well <u>26.40</u>	Total Purge Volume <u>22</u>
Gallons per Foot <u>0.16</u>	Sampling Pump Intake <u>                    </u>
Gallons in Well <u>4.2 x 5 = 21.0</u>	(feet below MP) <u>                    </u>

Evacuation Method 2" SUBMERSIBLE PUMP

### SAMPLING DATA/FIELD PARAMETERS

Color Clear Odor — Appearance — Temperature 26 °C

Specific Conductance (µmhos/cm) .51 pH 6.97 Dissolved Oxygen 1.5 mg/L

Turbidity 4.7 NTUs Eh                      mV

Other                     

### CONTAINER DESCRIPTION

Constituents Sampled	Lab <u>X</u> or G&M <u>                    </u>	Preservative
VOCs (8260)	3 40-ml vials	HCL
SVOCs (8270)	2 1-liter amber glass	None
Cyanide (9010)	1 1-quart, plastic	NaOH
Priority Pollutant Metals & Barium (6010)	500 ml plastic	HNO3
Mercury (7470)	500 ml glass	HNO3

Remarks                     

Sampling Personnel Joe Hughes, David Page

GAL./FT.	WELL CASING VOLUMES					
	1-1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65		
	1-1/2" = 0.09	2-1/2" = 0.26	3-1/2" = 0.50	6" = 1.47		



**VOLUME I**

**APPENDIX B**

**GEOPHYSICAL INVESTIGATION REPORT**

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7. Schlumberger Sounding, Sounding S2

# **GEOPHYSICAL SURVEY AT SLOSS INDUSTRIES BIRMINGHAM, ALABAMA**

## **INTRODUCTION**

Geophysical surveys were required around Solid Waste Management Units (SWMU) at SLOSS Industries facility in Birmingham, Alabama. These surveys satisfy some of the requirements of an RIFS at this site. The surveys were a continuation of earlier surveys conducted in 1996, when seismic refraction data was recorded around the SWMU's.

The data was recorded during the time period July 7 to July 14, 1997.

Conductivity and resistivity surveys were run round SWMU 23 and SWMU 38/39. These were designed to see if conductive landfill material had migrated away from the landfills, probably as a leachate moving in the groundwater under and around the landfills.

## **GEOLOGY / PHYSICS**

Many contaminants increase the electrical conductivity of water. This occurs either because the contaminant itself is electrically conductive, or more commonly because a suite of fluids moves with the contaminant, components of which are electrically conductive. Probably the most common substances which increase the electrical conductivity of water are salts of various kinds. When these flow from the ground surface through the unsaturated zone to the saturated zone they first increase the conductivity of the unsaturated zone. Once they reach the groundwater they then increase its electrical conductivity.

The electrical conductivity of soils and rocks depends mostly on the porosity of these materials, the conductivity of the saturating water and the degree of saturation of the pores. However, another factor to be considered is the amount of clay present. Clays are very fine grained material and often have free electrical charges on the grain surfaces. These charges

contribute to the electrical conductivity and result in the conductivity of clay materials being higher than can be accounted for by considering porosity and saturating water conductivity.

At the Sloss site five to twenty feet of soil covers a limestone bedrock. The limestone is steeply dipping and forms a somewhat erratic bedrock surface. In situ weathering of the bedrock has resulted in the formation of lenses of clay.

Geophysical surveys were conducted around two main Solid Waste Management Units (SWMU) at the site. These landfills contain industrial waste including fly ash which contains metals. It is suspected that this material may be electrically conductive. The geophysical surveys were designed to measure the electrical conductivity of the ground and to locate any anomalous areas of unusually high conductivity.

It is expected that the electrical conductivity of the ground at Sloss can be broadly divided into the overburden conductivity and the bedrock conductivity. Although the water table is generally well below the bedrock surface there are areas of saturation within the limestone above the water table. It is expected that the limestone bedrock will generally have a lower conductivity than the overburden. This is because, apart from fractured regions, limestone is generally a low porosity rock. In regions where the limestone is fractured and saturated its conductivity will be increased. Contamination from the SWMU's, if it occurs, may have drained vertically into the ground until reaching a saturated zone within the limestone. It would then move along with the groundwater movement, which is generally to the north. In addition, during heavy rains, contamination may drain from the SWMU's onto the local ground surface and then infiltrate the soil and bedrock. The geophysical surveys are primarily designed to locate areas of high conductivity associated with contaminants in the bedrock.

Because of the higher expected conductivity of the overburden, and the variable nature of the overburden thickness, surveys were performed to map the ground conductivity

to different depths. This better allows an interpretation of the conductivity of the overburden and the bedrock.

### **GEOPHYSICAL MEASUREMENTS**

The electrical conductivity of the ground can be measured using several different methods. Two methods were used on this survey broadly called Terrain Conductivity and Ground Resistivity. Terrain Conductivity was measured using two instruments, one called an EM31 and the other an EM34. The EM31 can measure Terrain Conductivity at two depths, 10 and about 18 feet. At this site the EM31 was used to measure conductivities to 18 feet depth. The EM34 can also be used in different modes to give different depths. At this site the instrument was used with a coil separation of 20 meters and in the horizontal dipole mode. In this configuration the instrument has a depth of investigation of about 50 feet. Both instruments essentially measure the bulk electrical conductivity of the ground down to the depth of investigation of that instrument.

In addition, Ground Resistivity measurements were also taken. These measure the resistivity (reciprocal of conductivity) of the ground. Ground Resistivity measurements were taken using four electrodes (12 inch nails) placed into the ground a few inches. The electrodes are in a straight line with the two inner electrodes being placed close together (a few feet) and the two outer electrodes being either 20 feet or 100 feet from the center of the "array". This particular electrode array used to obtain the resistivity measurements is called the Schlumberger array. A small electrical current is passed through the outer electrodes which then penetrates the ground. The voltage developed by this current is then measured across the two inner electrodes. Simple calculations using the electrode array geometry along with the current and measured voltage give the resistivity of the ground. The depth of investigation of the Schlumberger array depends on the resistivity structure of the ground but is generally somewhat less than the distance from the center of the electrode array to one of the outer electrodes.

The EM31 and EM34 instruments use electromagnetic waves to measure the conductivity of the ground. These waves are generated in a coil through which oscillating electrical current flows. The electromagnetic field surrounds the coil and interacts with any conductive material in the vicinity of the coil. At the Sloss site there were above ground pipes at some locations and railroad lines and cars along the north western side of SWMU 38/39. It was suspected that these cars in particular would influence the conductivity readings. This would be particularly true with the EM34 system which penetrates to a greater depth than the EM31 and has a larger sphere of influence. However, with "Grounded Resistivity measurements the electrical current is injected directly into the ground. Very little electrical current is present in the atmosphere above the ground and the above ground railroad cars have little influence on the data.

## **GEOPHYSICAL RESULTS**

### **SWMU 23**

SWMU 23 is at the north end of the Sloss site and is at a higher elevation than SWMU 38/39. No "cultural" features are close to the landfill which would interfere with the EM31 or EM34 instruments. Data was recorded with the EM31 at stations spaced 5 feet apart around the landfill. Additionally, data was recorded with the EM34 configured to have a depth of investigation of about 50 feet. EM34 readings were taken every 25 feet. The EM31 data is presented on figure 1. The EM34 data is presented on figure 2. Both of these plots show the conductivity data presented as a colored ribbon around the path taken during data recording. The numbers along this path are the field flag numbers used to locate the traverse. These have been surveyed and are used to locate and present the data at its proper location. These flags are 50 feet apart. The color bar at the side of the data shows the conductivity values associated with each of the traverses. Both the EM31 and EM34 data sets are also presented on Figure 3 in order to compare directly the deep and shallow data. On the EM31 data three anomalies are seen and are labeled A, B and C on figure 1. Figure 2 shows anomalies A and D seen by the deeper looking EM34. Figure 3 shows that anomaly A is

clearly observed on both data sets. Anomalies C (EM31) and D(EM34) are each quite complex anomalies and generally occur over the same region but with different locations for their maximum values.

Anomaly B is seen mostly on the EM31 data. The EM34 data shows only a low amplitude anomaly at this site. Therefore this anomaly probably reflects overburden thickness variations rather than conductive material in the bedrock. The region about anomaly A is topographically higher than the SWMU, which appears to be in a small depression in the hillside. Since Anomaly A is visible in the shallow data (EM31), and, because it is topographically higher than the SWMU, it is unlikely to result from contamination from the SWMU. It seems likely therefore that this higher conductivity zone is caused by clay.

As discussed above, anomalies C and D are essentially complex anomalies in the same region and are therefore considered as one anomaly. Thus the area has increased conductivity both at shallow and deeper levels. This area is generally a small valley and is topographically lower than the SWMU. It is possible that these anomalies result from liquids flowing down the valley from the SWMU and infiltrating into the bedrock. However, it should be noted that the maximum conductivity at this location is only about 30 millimho/m which is not a high value. Moreover, the average shallow conductivity is less than 20 millimho/m and the average deep conductivity is less than 15 millimho/m.

### **SWMU 38/39**

It was initially planned to conduct EM31 and EM34 around most of this landfill. Resistivity was planned for only a small section along the north western side of the landfill near the rail road tracks. However an overhead pipeline was present along the south eastern part of the SWMU and a buried gas pipeline was present along the northern part of the south eastern side of the landfill. The approximate locations of these pipelines are shown on figures 1 and 2. Because of the overhead pipeline and the railroad tracks and cars it was

decided to conduct Grounded Resistivity readings around the landfill instead of the EM34 measurements. Since the radius of influence of the EM31 is only about 20 feet it was felt that the overhead pipeline would not significantly interfere with this data. Only the railroad cars may be a problem for the EM31. Because of this a shallower Grounded Resistivity survey was also conducted along the railroad tracks.

In order to determine the vertical succession of resistivity two Schlumberger soundings were conducted. The locations for the two soundings are shown on figures 1 and 2 as locations S1 and S2. The sounding data is presented as figures 6 and 7. The data is presented as a graph showing the measured resistivity (usually called Apparent resistivity) against the half current electrode spacing. This data has been interpreted to provide the variation of resistivity with depth. The interpretation of each sounding is presented on the upper right hand side of each sounding plot.

Sounding S1 shows a resistive layer, interpreted to be limestone bedrock, at a depth of 9.5 feet. The overburden is more conductive than the bedrock as was expected. Soundings S2 shows bedrock to be somewhat deeper at 21 feet. The limestone bedrock here is less conductive than that at S1 indicating a more competent and less fractured rock. The soundings also show that an electrode spacing of 100 feet penetrates well into the bedrock. A spacing of 20 feet barely reaches the bedrock and provides data mostly influenced by the overburden.

The EM31 data around SWMU 38/39 is presented on figure 1. The resistivity data around SWMU 38/39 is presented on figure 2. Figure 2 shows the resistivity data around the landfill as a colored ribbon representing the conductivity values obtained. The field flag numbers are also presented. Figure 4 presents both the resistivity and EM31 data. The EM31 data shows four areas of higher conductivity. These are shown on figure 1 and are labeled E, F, G and H. The resistivity data, shown on figure 2, shows only anomalies E, F and H. A comparison of the resistivity and EM31 data on figure 4 shows that anomaly G is not seen on the resistivity plot indicating no bedrock anomaly. Thus only anomalies E, F and



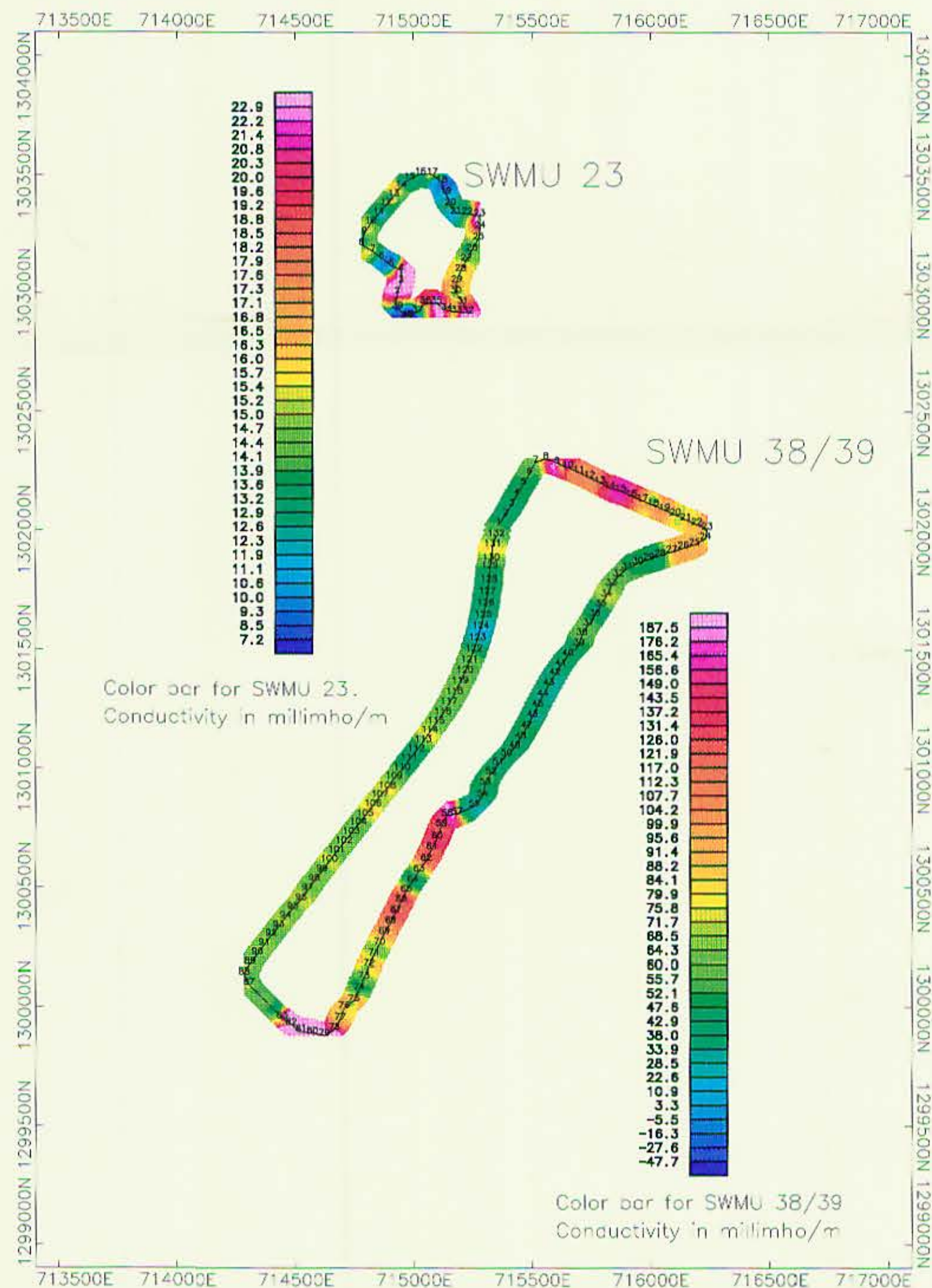
H are considered. Anomaly H crosses an area where material from the landfill appears to have spread out and may lie under the traverse location. If this landfill material is conductive, as is suspected, then this anomaly results from this conductive material. This interpretation is supported by the fact that only a low amplitude anomaly seen on the deeper resistivity data at this location. Anomalies E and F are essentially part of a broader region of higher conductivity along the northern edge of the landfill. This is along a roadside. Comparing the EM31 and resistivity data on figure 4 shows that the anomaly is most prevalent on the EM31 data and less so on the resistivity data. Therefore the conductivity anomaly is less pronounced at depth. It is possible that this anomaly results from a clay layer or thicker overburden at this location.

Along the north western side of SWMU 38/39 run several rail road tracks on which were parked a line of rail road cars. It was thought that these cars would influence the EM31 data. If this was the case then the shallow conductivity data along this side of the landfill would not provide a good indication of the overburden conductivity. Therefore a resistivity traverse was conducted along this side of the SWMU using a 20 foot electrode spacing. This electrode spacing provides a similar depth of investigation to that of the EM31. The data is plotted as a colored ribbon on figure 2, offset 100 feet to the west of its correct position. Figure 5 presents this data, converted to conductivity, along with the conductivity data recorded with an electrode spacing of 100 feet. As can be seen from this graph, variations in the shallow conductivity are between 20 and 50 millimho/m which is not a particularly wide range. In addition, no particular anomaly stands out. The deeper conductivity values show even less variation and again present no large anomalies.

## CONCLUSIONS

Terrain Conductivity and Ground Resistivity data have been acquired around SWMU 23 and SWMU 38/39 at the Sloss site in Birmingham, Alabama. The surveys show several anomalies labeled A through H. However, anomalies B, G and H all appear to be caused by fairly shallow features and are not considered bedrock anomalies. Anomaly A on SWMU 23

is topographically higher than the SWMU and therefore it seems unlikely that it results from contamination from the SWMU. This anomaly is interpreted as resulting from clay at this location. Anomalies E and F are part of a broad complex anomaly at the north end of SWMU 38/39. Although fairly high conductivity values are seen on the EM31 data much lower values occur on the resistivity data. This anomaly could therefore result from clay or deeper overburden. Finally anomalies C and D (SWMU 23) are part of a complex anomaly at this location. The anomaly is seen in the shallow and deep results although the amplitudes are not particularly high. This data suggests that conductivity is increased in the bedrock at this location.



## EM31 Conductivity Data

EM31 data recorded around SWMU 23 and 38/39. Data recorded in vertical dipole mode with readings taken every 5 feet. EM31 boom kept parallel to direction of travel.

Field flags placed around each SWMU. Consecutive flags are 50 feet apart.

..... EM31 data points around each SWMU.

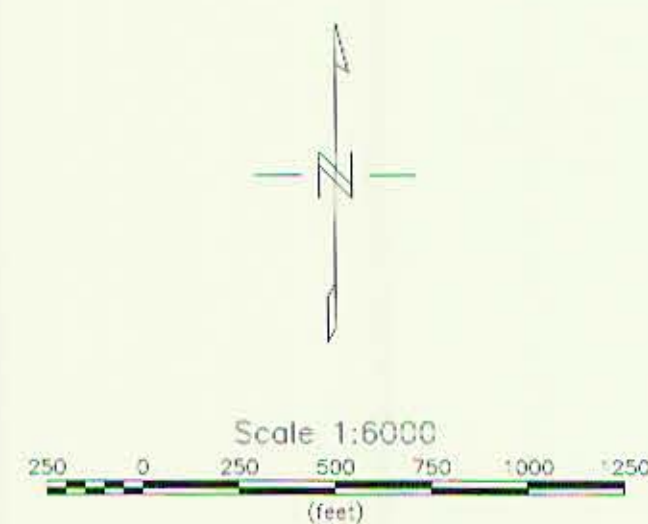


FIGURE 1

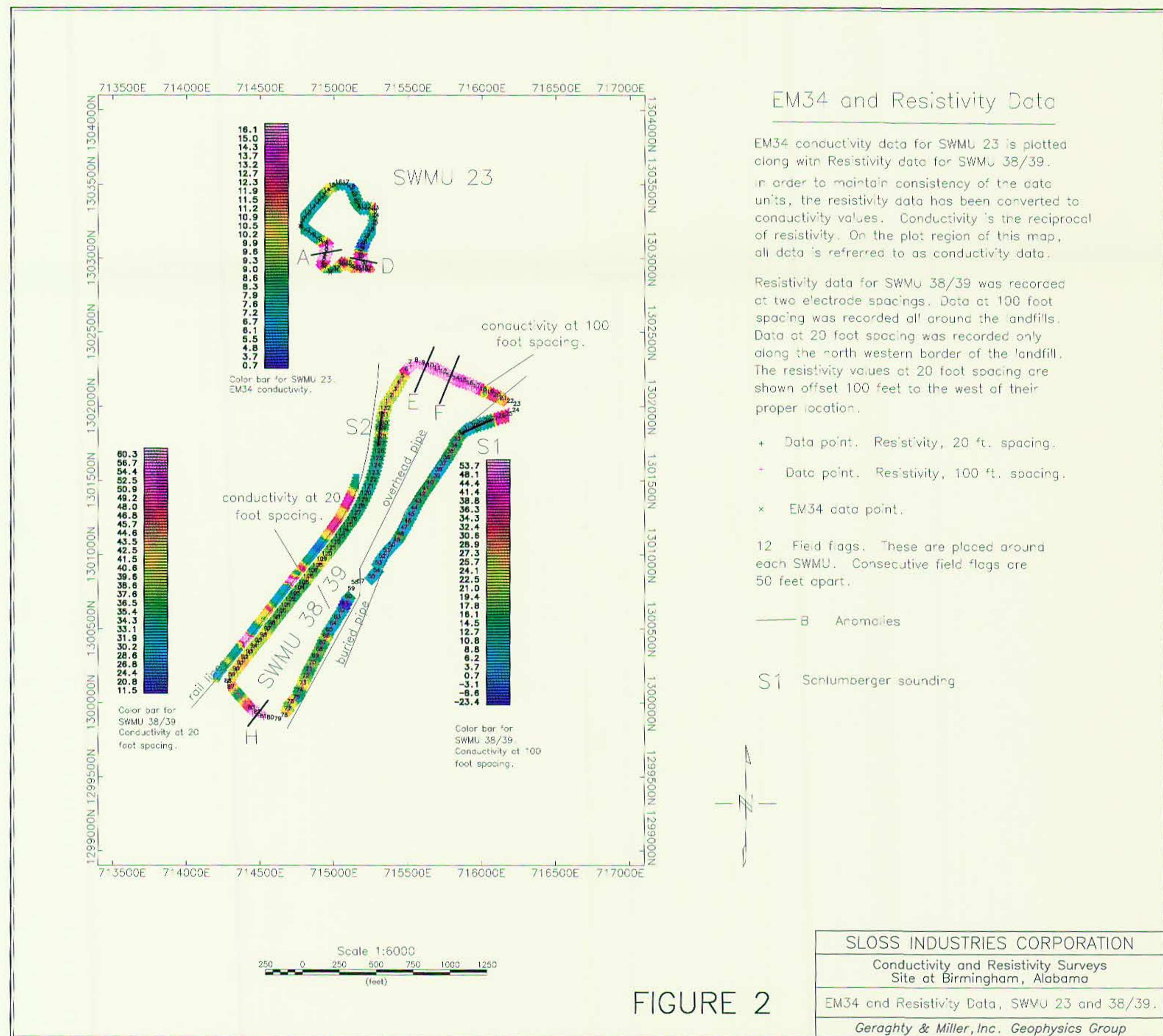
SLOSS INDUSTRIES CORPORATION

Conductivity and Resistivity Surveys  
Site at Birmingham, Alabama

EM31 conductivity data, SWMU 23 and 38/39

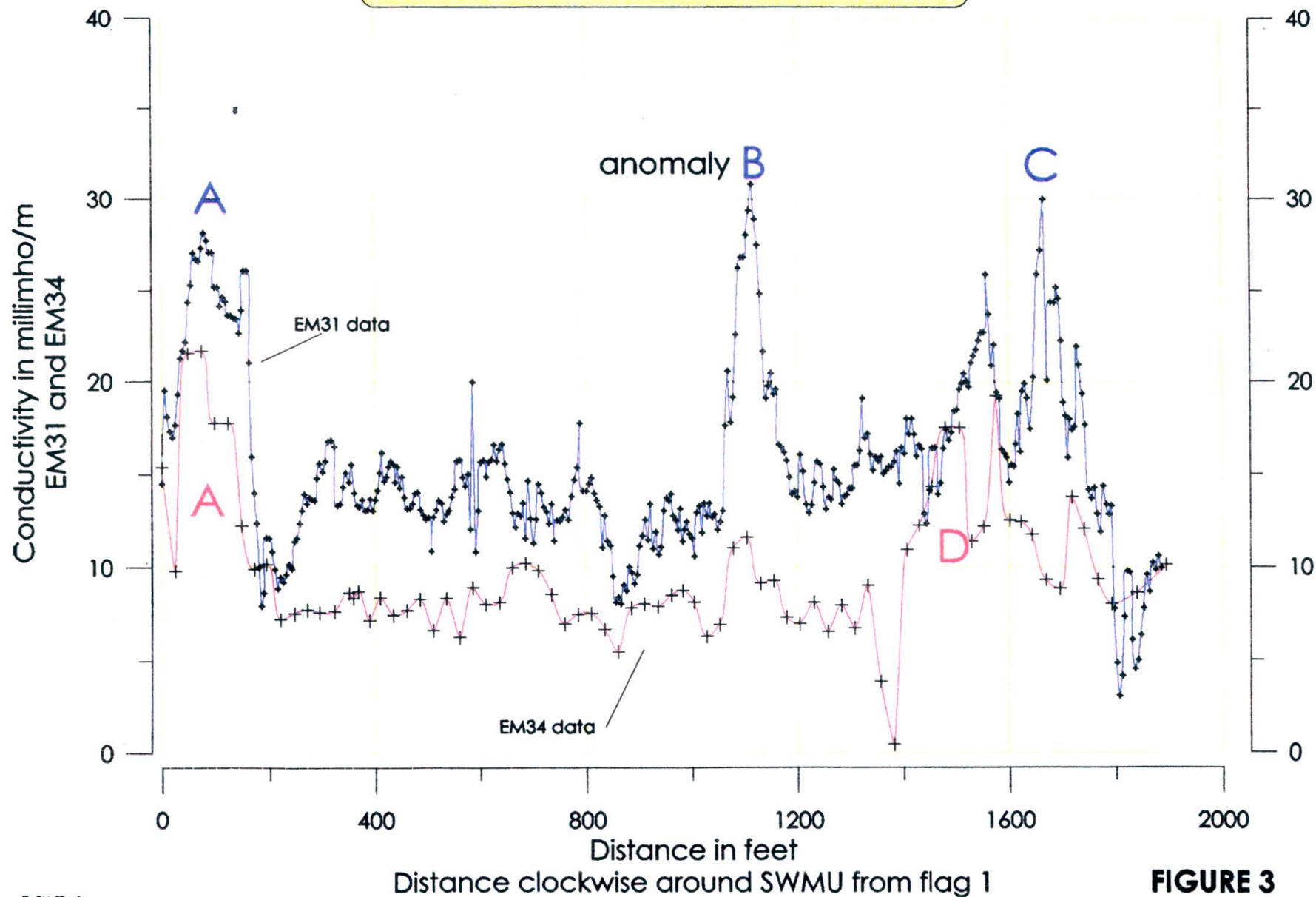
Geraghty & Miller, Inc. Geophysics Group



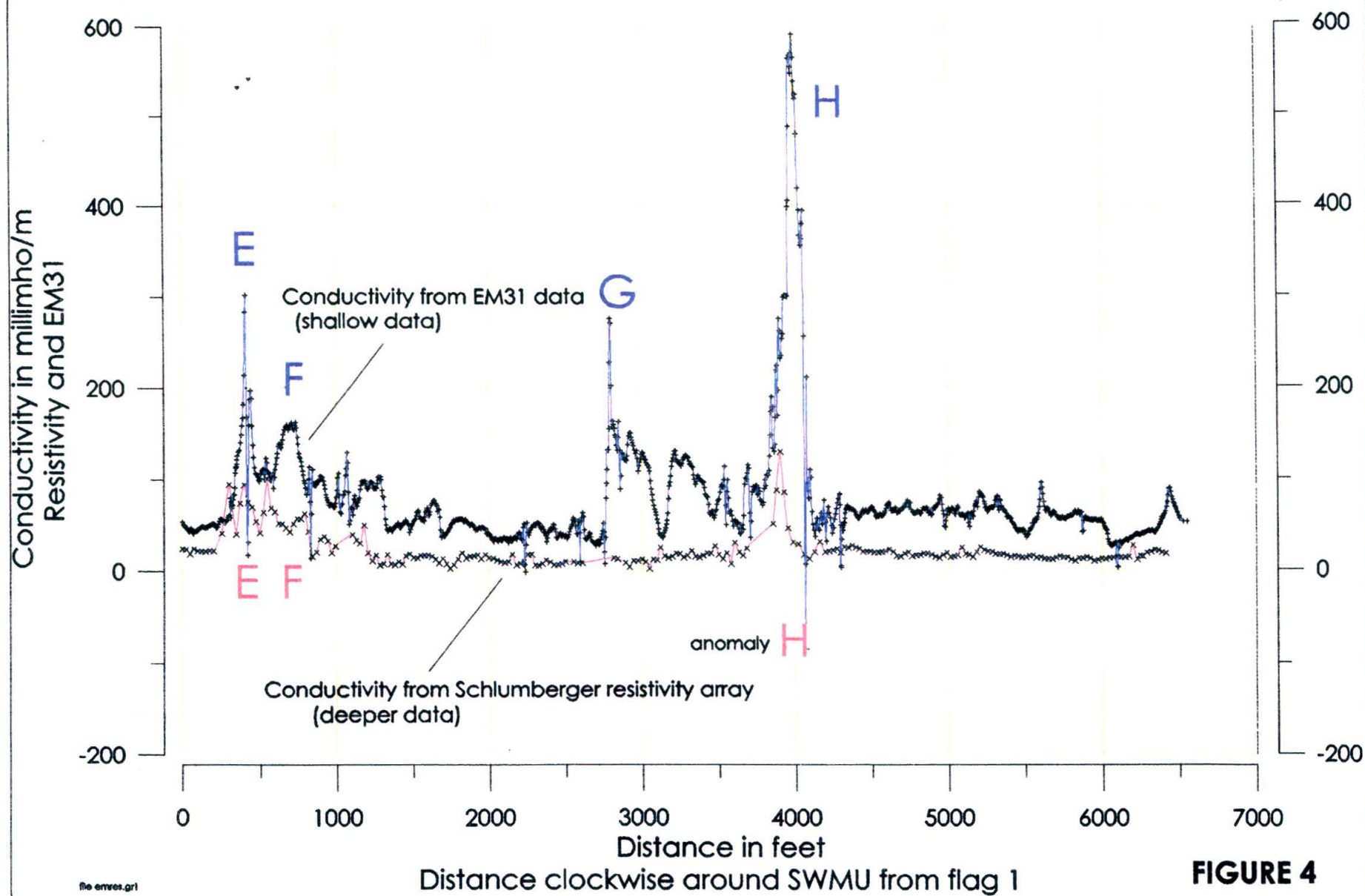




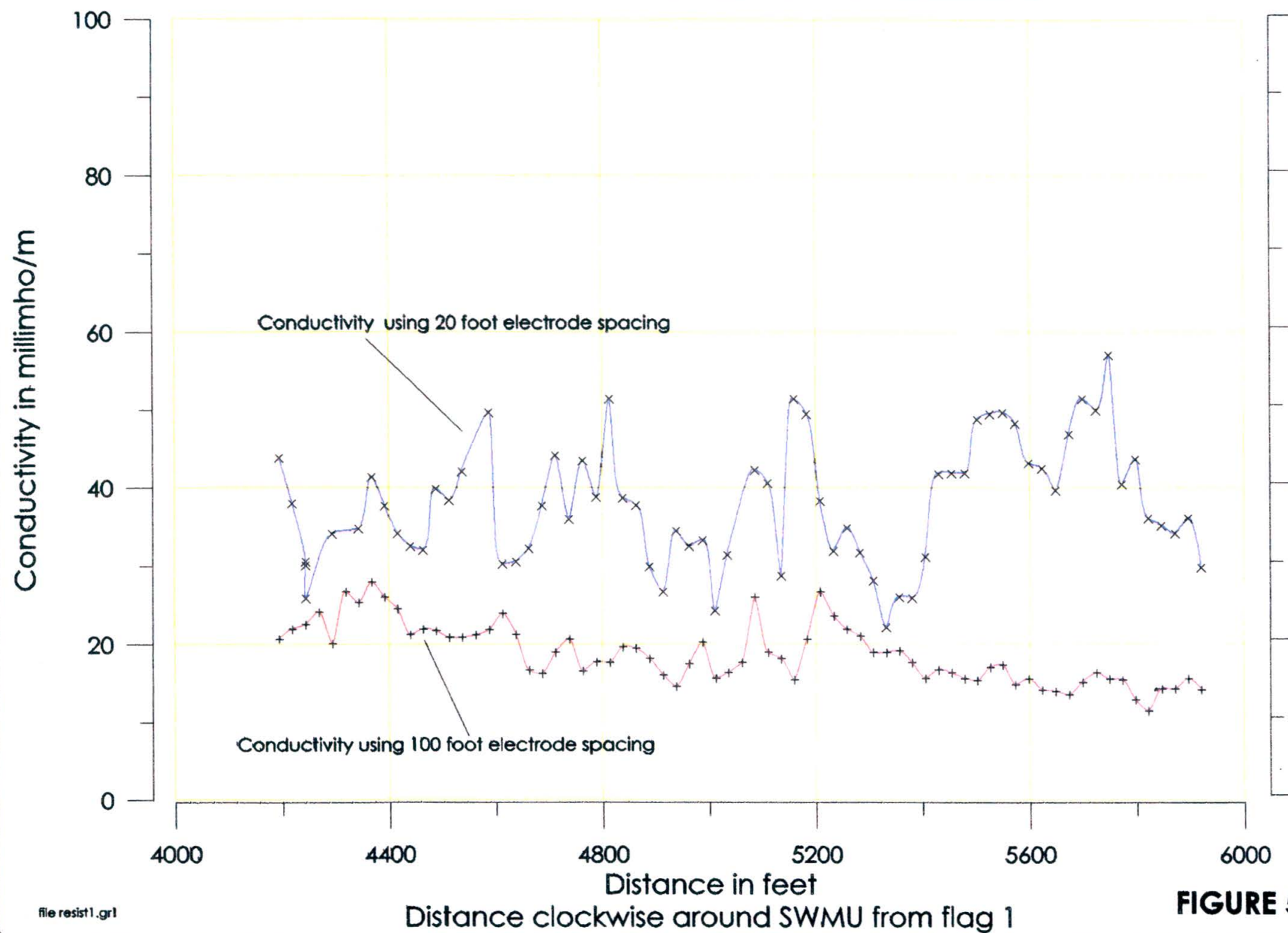
Sloss Industries Corporation  
EM31 and EM34 data around SWMU 23



Sloss Industries Corporation  
Resistivity and EM31 data around SWMU 38/39



Sloss Industries Corporation  
Resistivity data, 20 and 100 foot electrodes



**FIGURE 5**

# SCHLUMBERGER SOUNDING

Recorded at field flag 28, SWMU 38/39

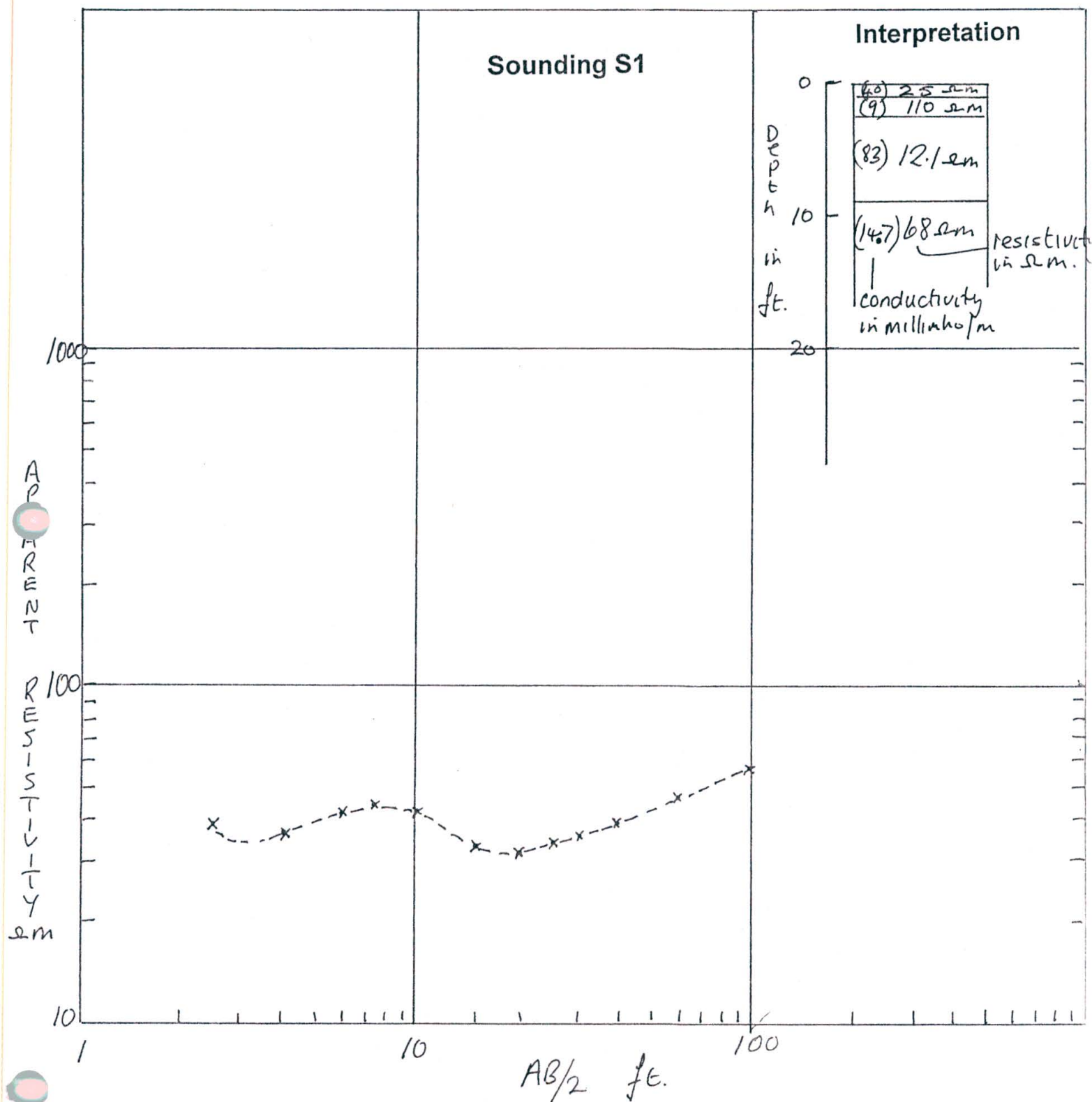


Figure 6



# SCHLUMBERGER SOUNDING

Recorded at field flag 127, SWMU 38/39

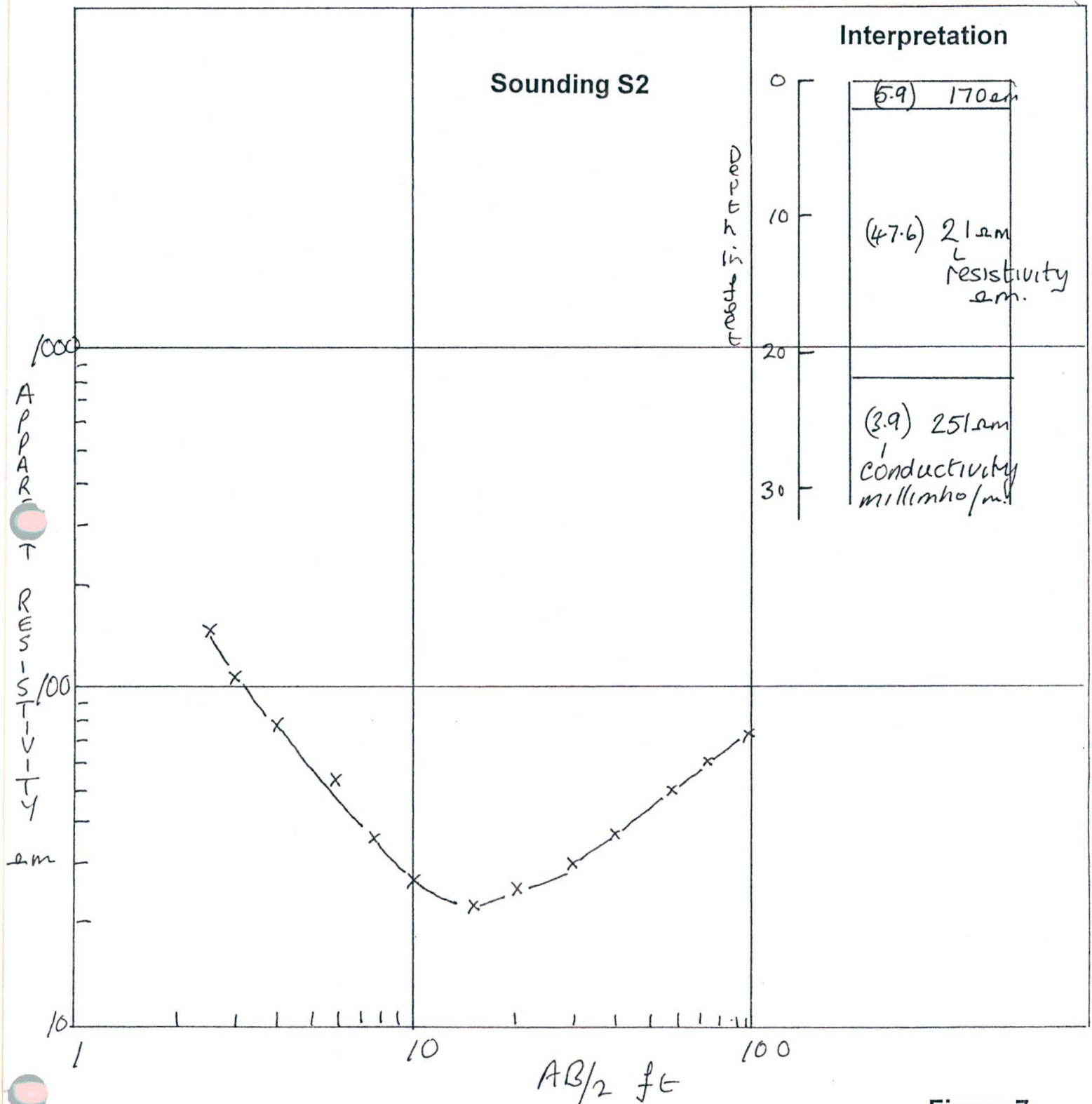
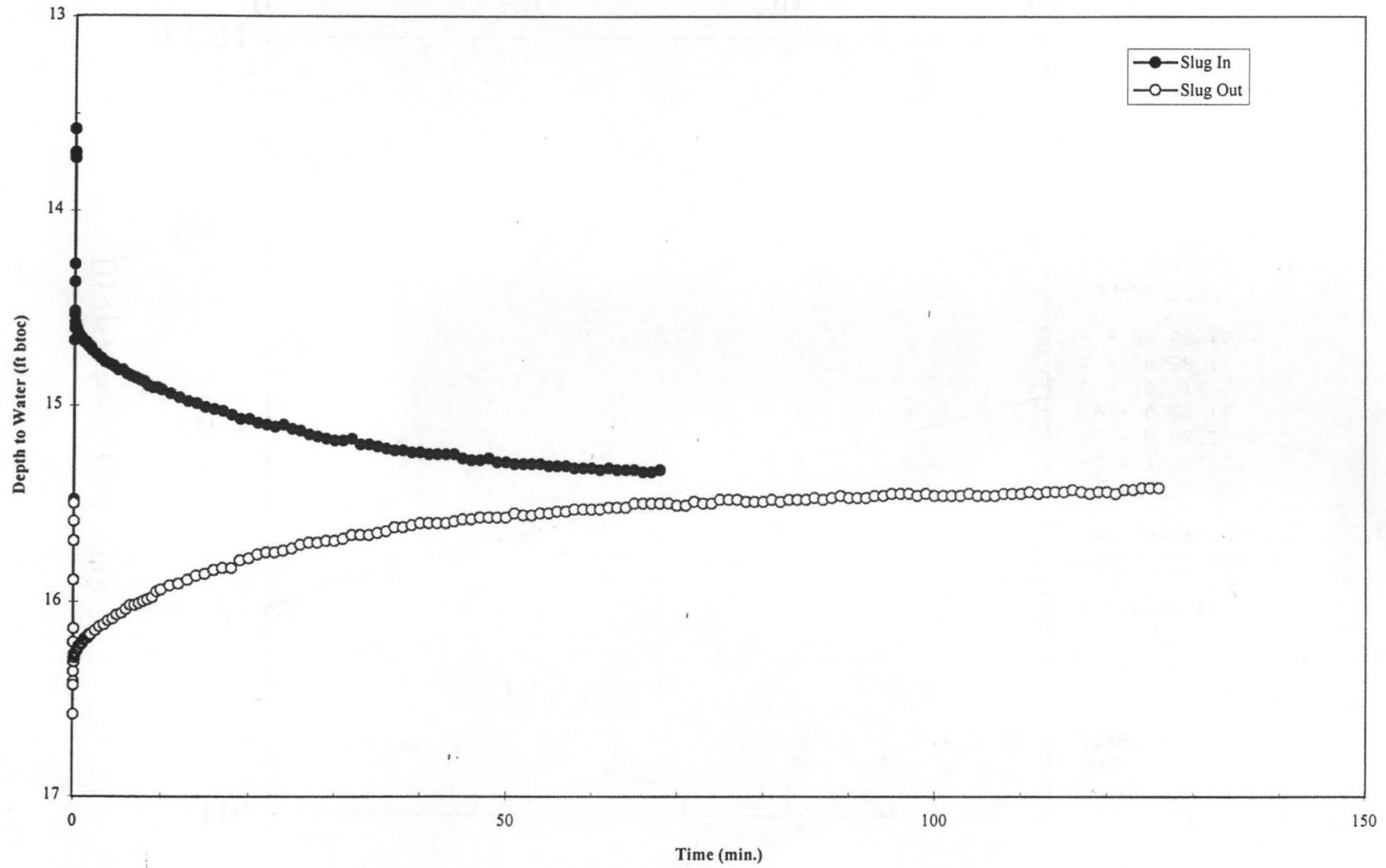
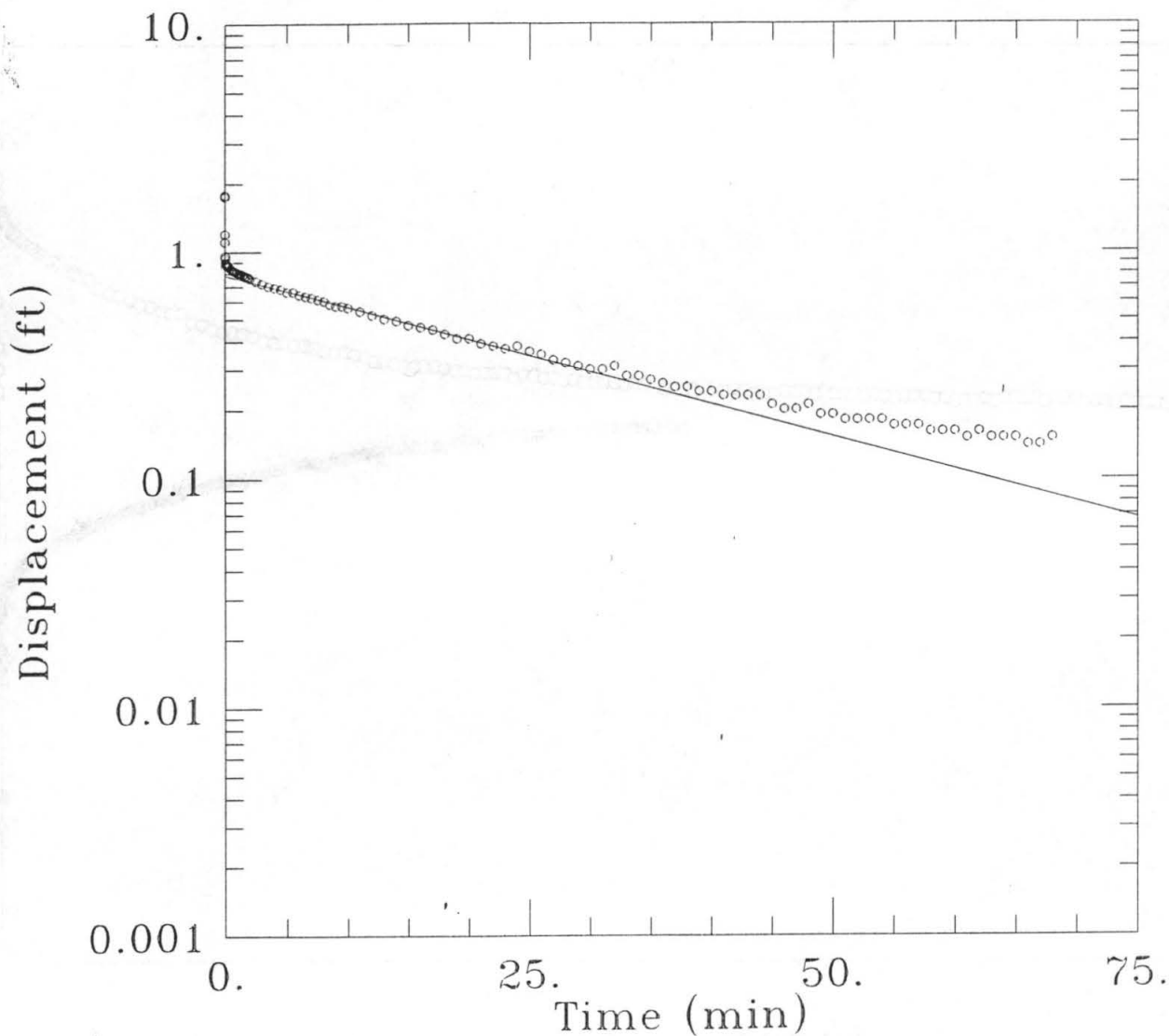


Figure 7

# MW-21 Aquifer Tests





DATA SET:  
MW21SI.DAT  
10/23/97

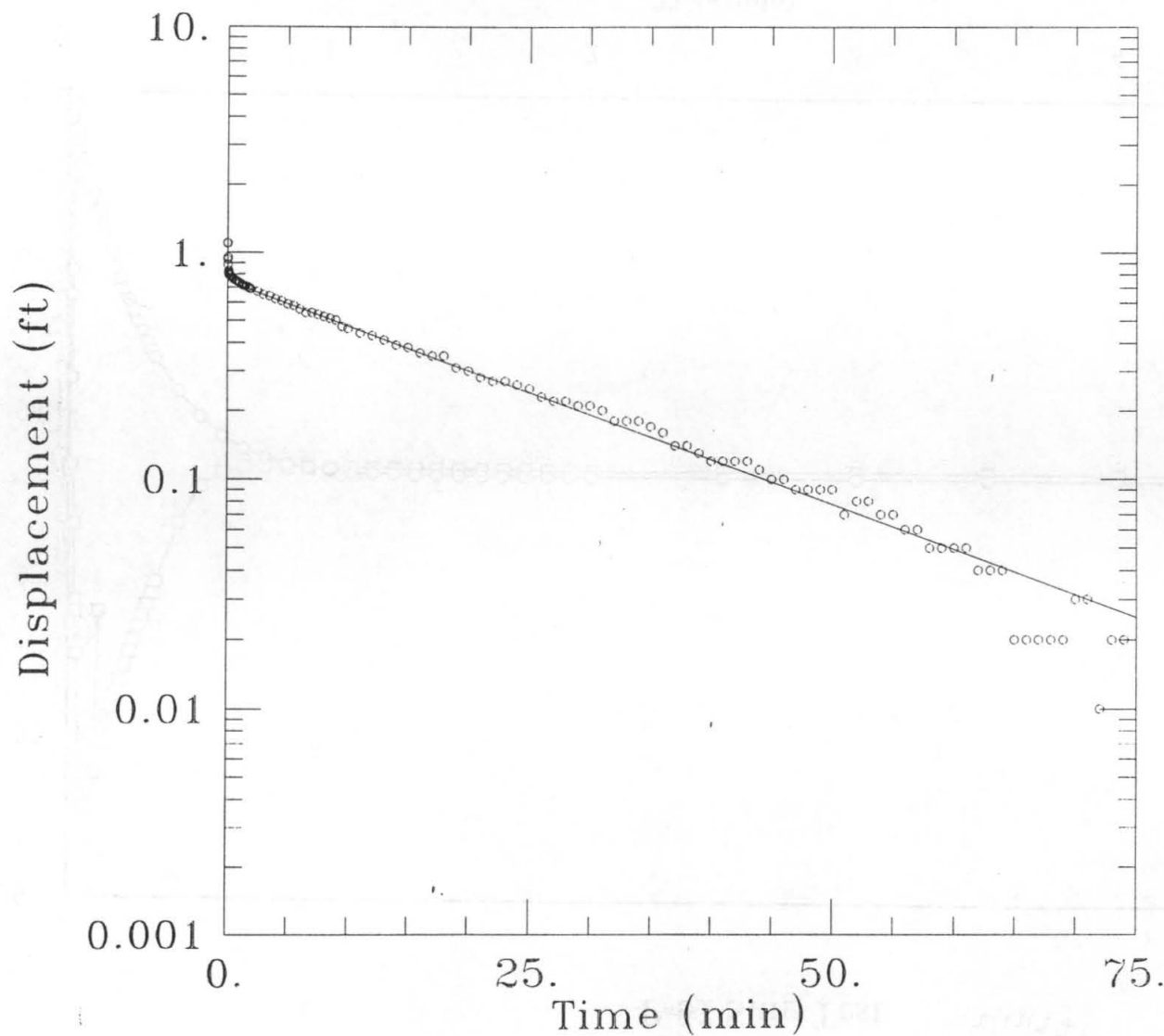
AQUIFER MODEL:  
Confined

SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/17/97

TEST DATA:  
H0 = 1.77 ft  
rc = 0.0833 ft  
rw = 0.25 ft  
L = 10. ft  
b = 26.58 ft  
H = 26.58 ft

PARAMETER ESTIMATES:  
K = 3.873E-05 ft/min  
y0 = 0.7841 ft



DATA SET:  
MW21S0.DAT  
10/23/97

AQUIFER MODEL:  
Confined  
SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/17/97

TEST DATA:  
 $H_0 = 1.1$  ft  
 $r_c = 0.0833$  ft  
 $r_w = 0.25$  ft  
 $L = 10.$  ft  
 $b = 26.58$  ft  
 $H = 26.58$  ft

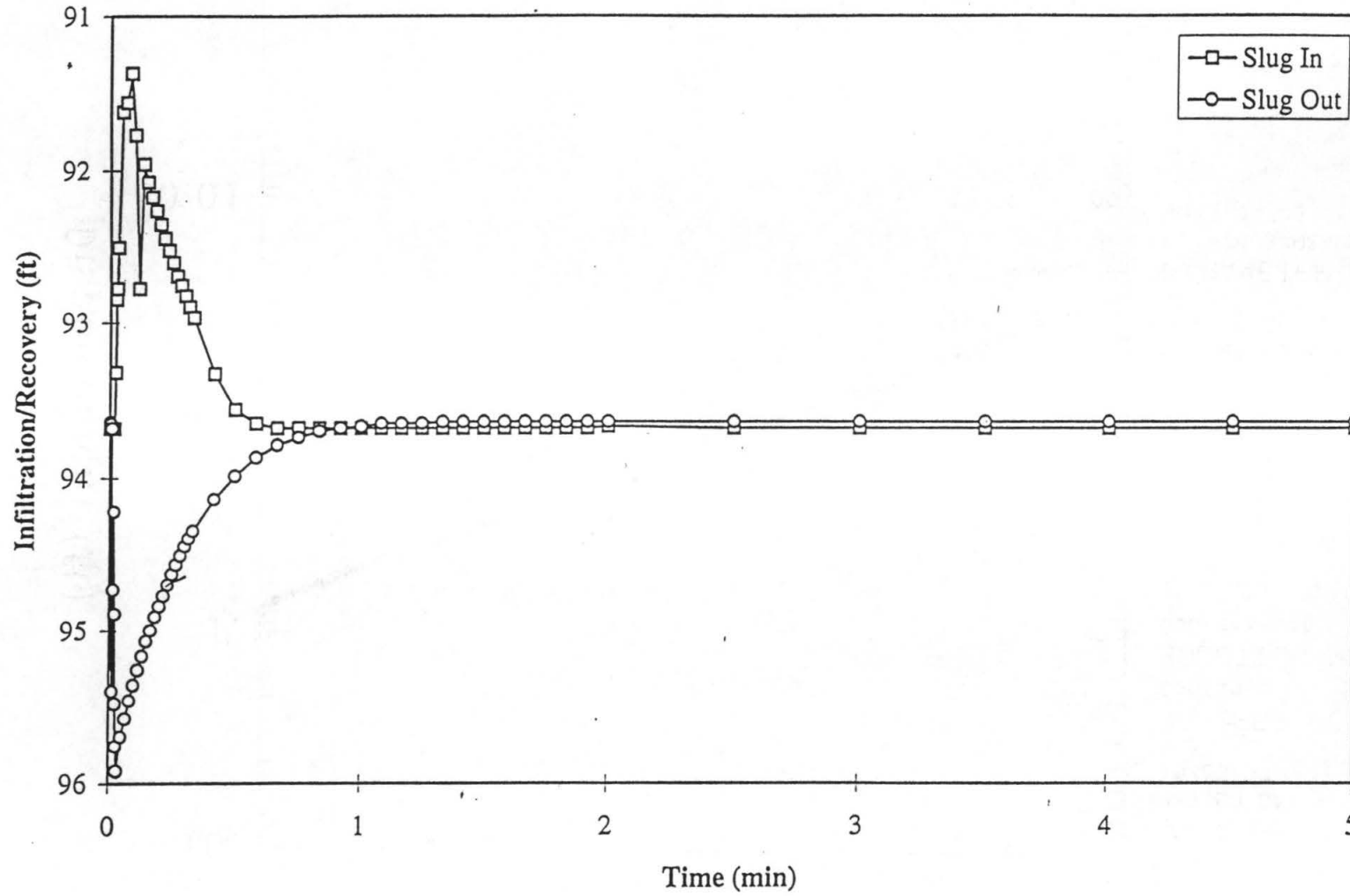
PARAMETER ESTIMATES:  
 $K = 5.349E-05$  ft/min  
 $y_0 = 0.743$  ft

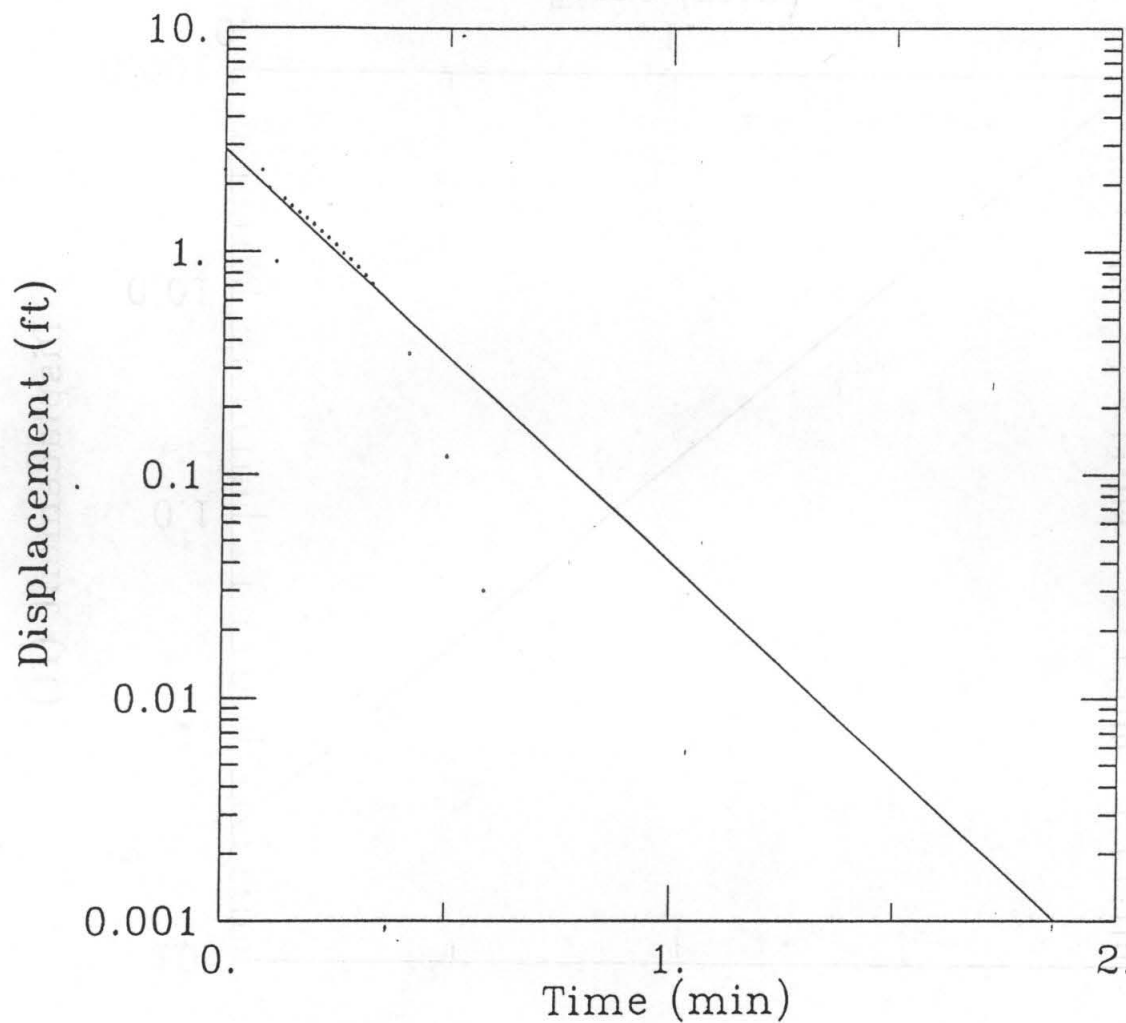
graph

MW-22

P-31 Slug Test

St  
12/17/97





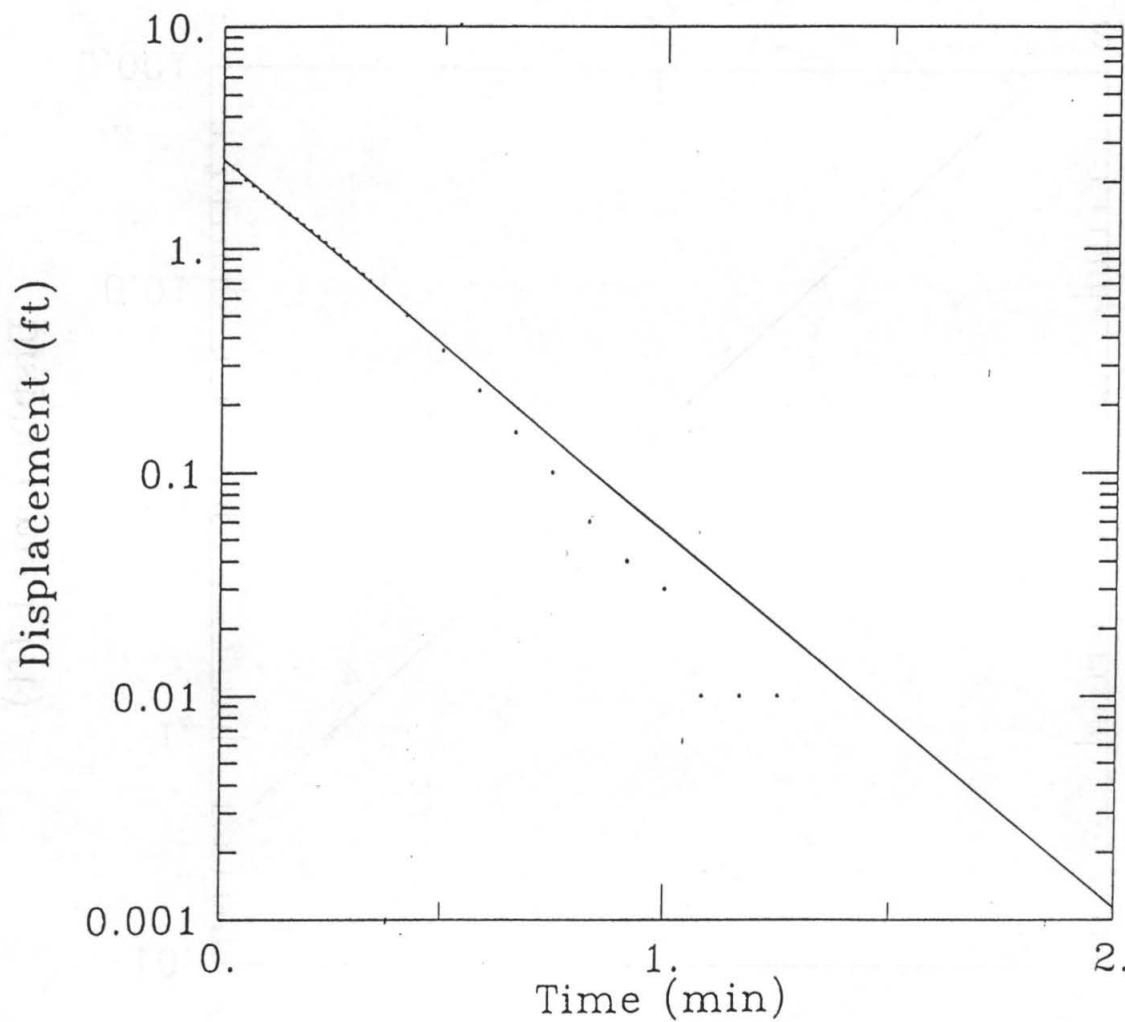
DATA SET:  
P31SI.DAT *W-27*  
09/25/95

AQUIFER MODEL:  
Confined  
SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/15/95

TEST DATA:  
H0 = 2.31 ft  
rc = 0.0833 ft  
rw = 0.25 ft  
L = 10. ft  
b = 27.5 ft  
H = 27.5 ft

PARAMETER ESTIMATES:  
K = 0.005093 ft/min  
y0 = 2.889 ft



DATA SET:  
P31S0.DAT rw-22  
09/25/95

AQUIFER MODEL:  
Confined

SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/15/95

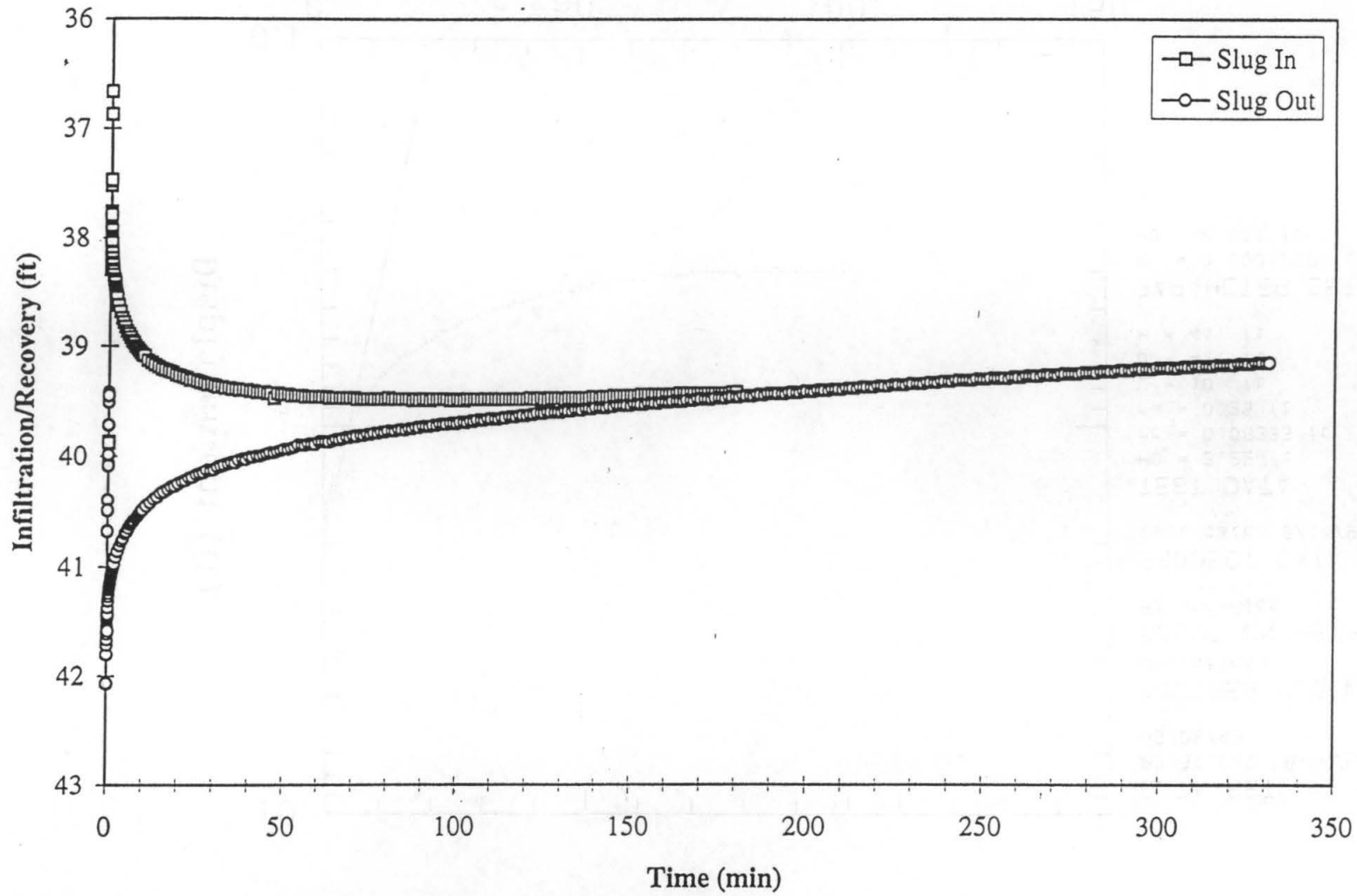
TEST DATA:  
H0 = 2.31 ft  
rc = 0.0833 ft  
rw = 0.25 ft  
L = 10. ft  
b = 27.5 ft  
H = 27.5 ft

PARAMETER ESTIMATES:  
K = 0.004596 ft/min  
y0 = 2.55 ft

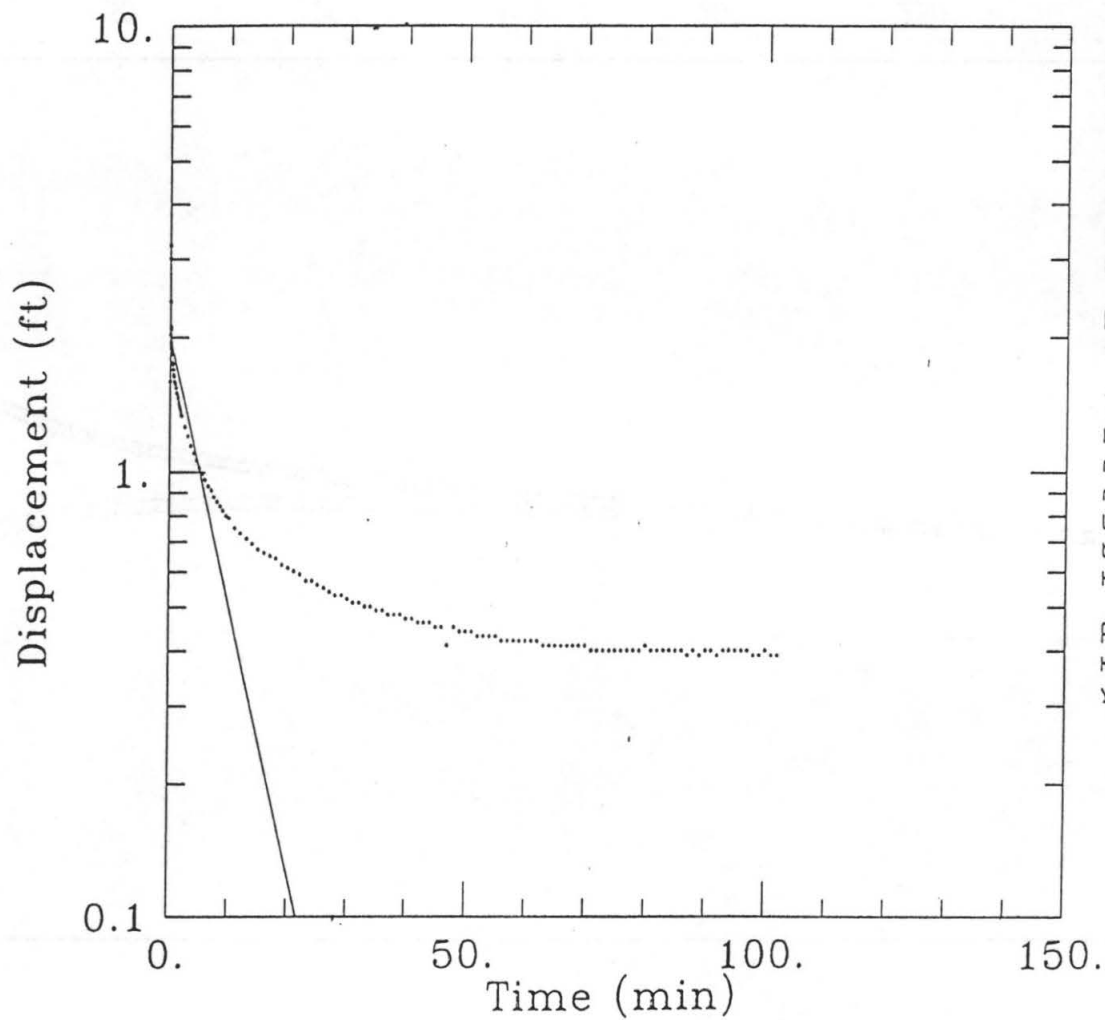
MW-23

P-30 Slug Test

(JH)  
12/19/97







DATA SET:  
P30SI.DAT *rw-23*  
09/22/95

AQUIFER MODEL:  
Unconfined

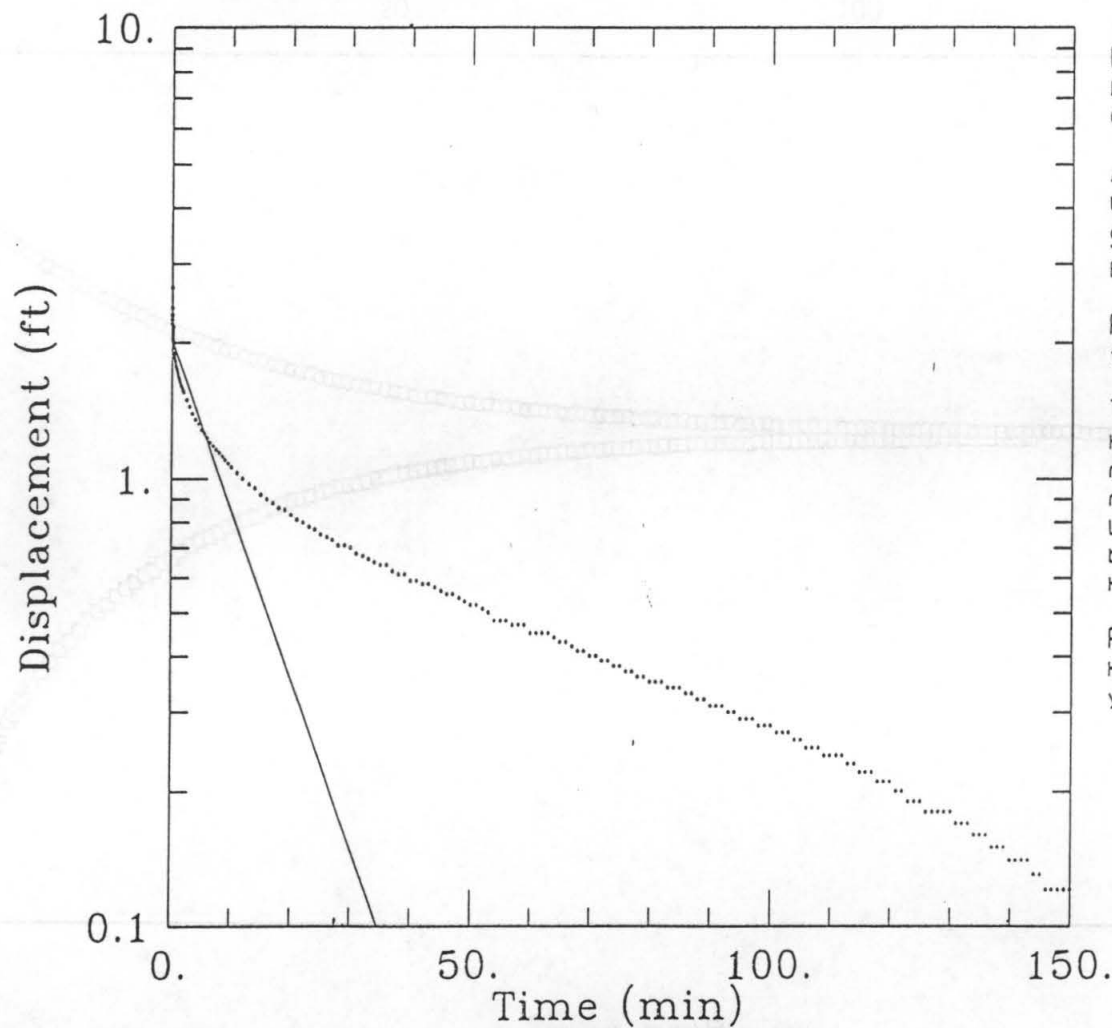
SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/14/95

TEST DATA:  
H0 = 3.22 ft  
rc = 0.08333 ft  
rw = 0.25 ft  
L = 10. ft  
b = 41. ft  
H = 41. ft

PARAMETER ESTIMATES:  
K = 0.0001752 ft/min  
y0 = 2.001 ft

000448  
Jk  
12/9/97



DATA SET:  
P30S0.DAT *rw-23*  
09/22/95

AQUIFER MODEL:  
Unconfined  
SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/14/95

TEST DATA:  
H0 = 2.65 ft  
rc = 0.08333 ft  
rw = 0.25 ft  
L = 10. ft  
b = 41. ft  
H = 41. ft

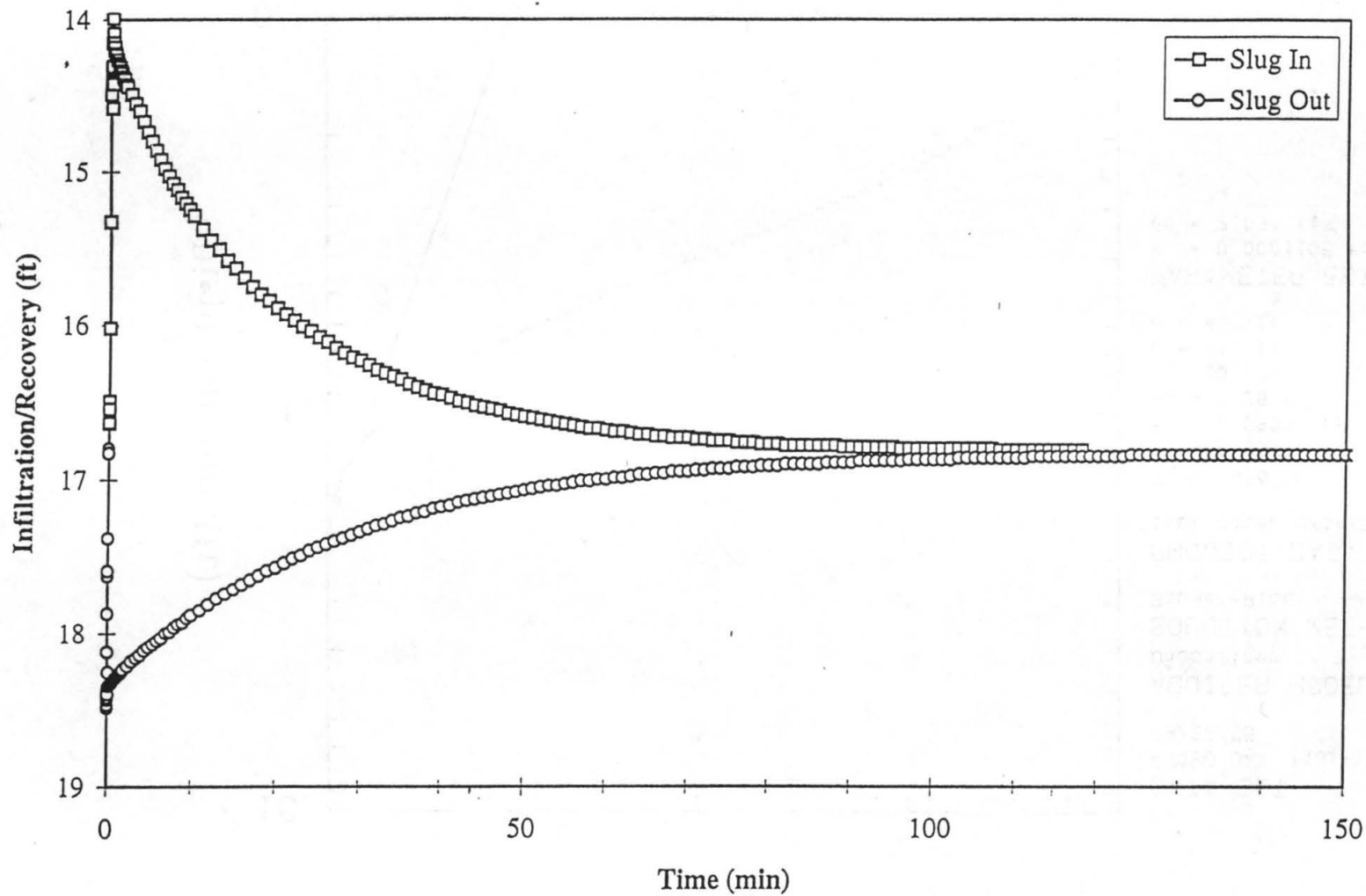
PARAMETER ESTIMATES:  
K = 0.0001105 ft/min  
y0 = 2.031 ft

graph

MW-24  
~~MW-25D~~

(JH) 2/12/97

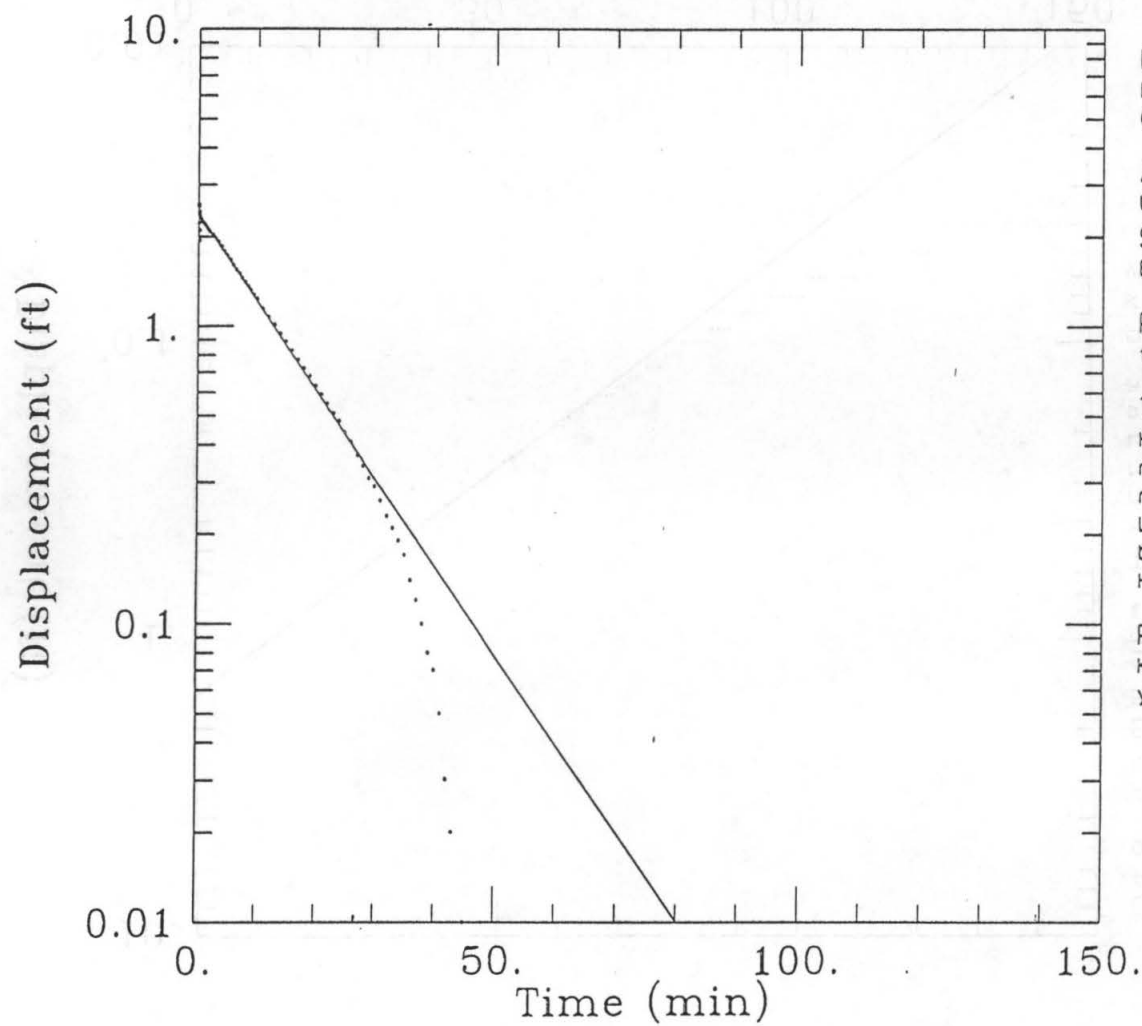
P-29 Slug Test



000443

(JH) 2/12/97

000444  
26  
12/19/97



DATA SET:  
P29SI.DAT HW-24  
09/22/95

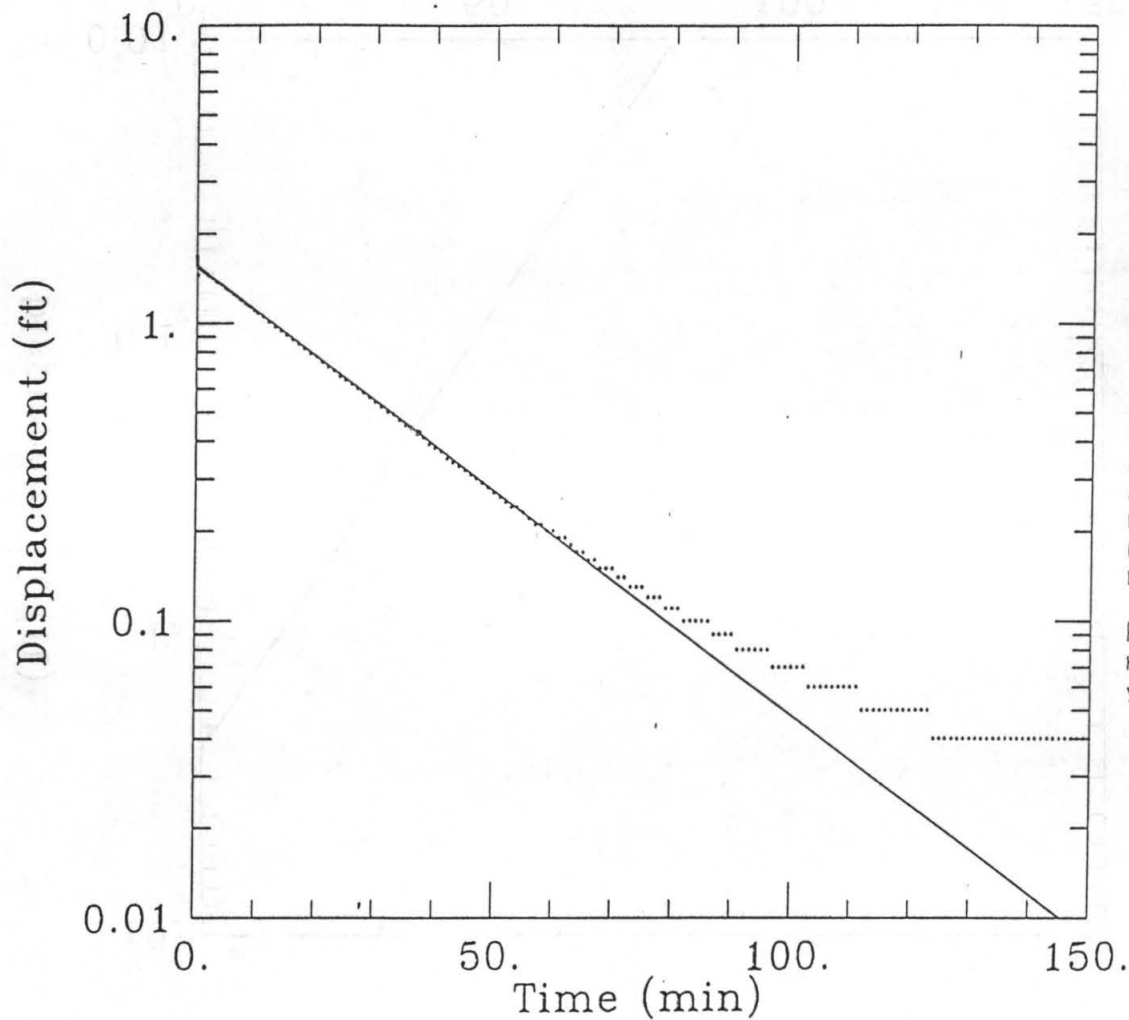
AQUIFER MODEL:  
Unconfined  
SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/16/95

TEST DATA:  
H0 = 2.57 ft  
rc = 0.08333 ft  
rw = 0.25 ft  
L = 10. ft  
b = 59.5 ft  
H = 59.5 ft

PARAMETER ESTIMATES:  
K = 9.177E-05 ft/min  
y0 = 2.384 ft

000475  
12/15/97



DATA SET:  
P29SO.DAT *rw-24*  
09/22/95

AQUIFER MODEL:  
Unconfined  
SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/16/95

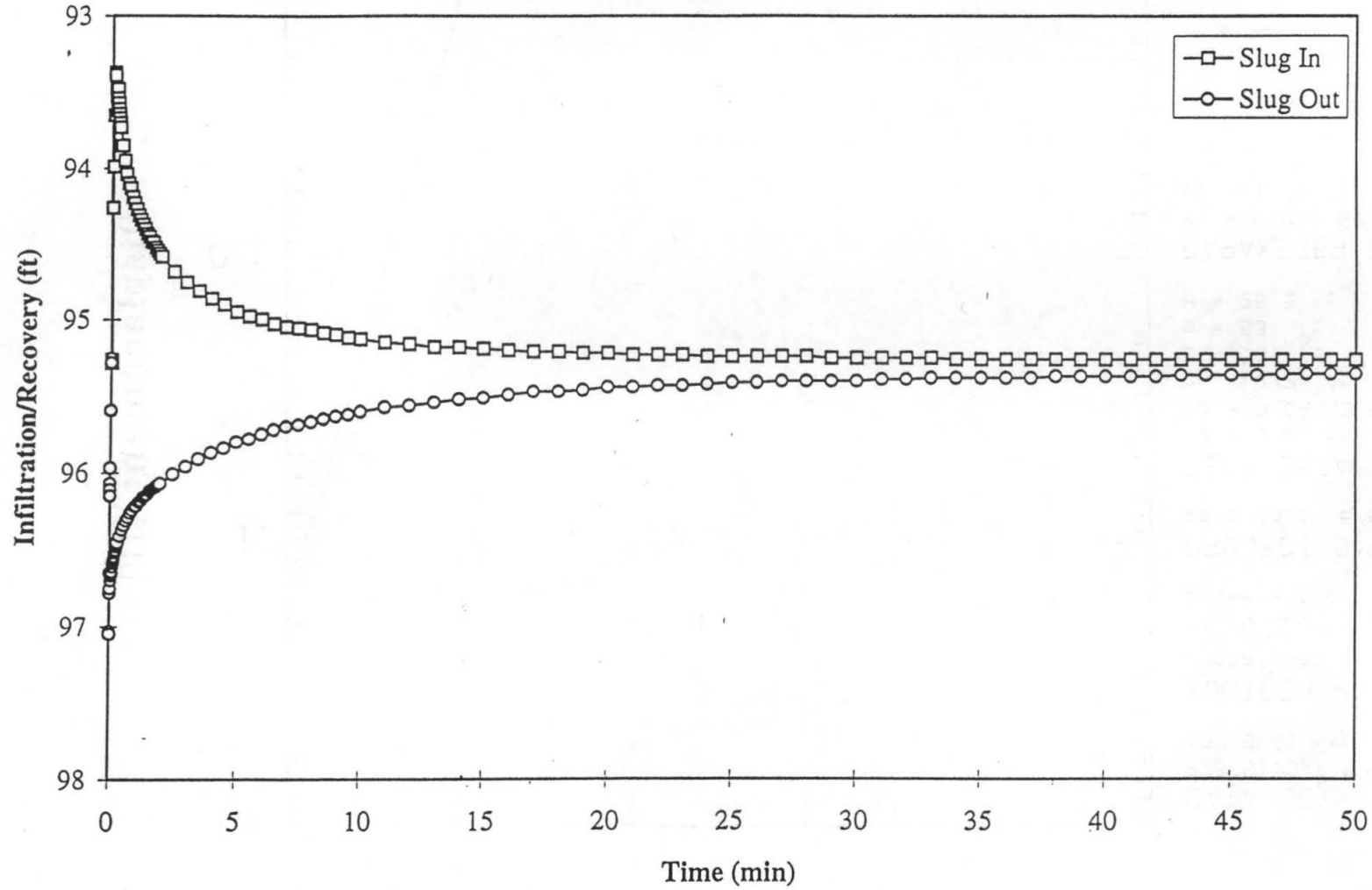
TEST DATA:  
H0 = 1.68 ft  
rc = 0.08333 ft  
rw = 0.25 ft  
L = 10. ft  
b = 59.5 ft  
H = 59.5 ft

PARAMETER ESTIMATES:  
K = 4.664E-05 ft/min  
y0 = 1.551 ft

graph

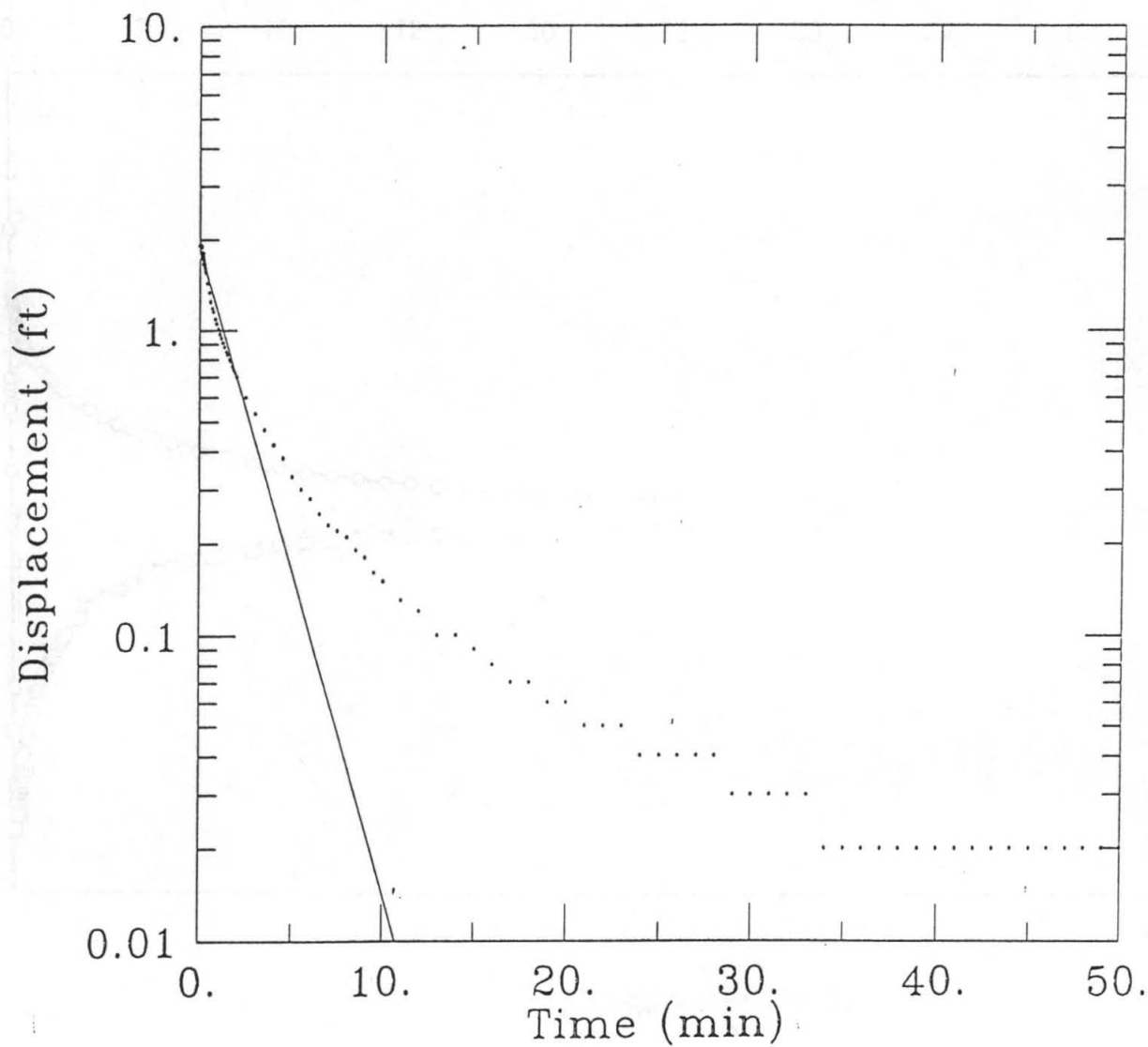
MW-255

# P-28S Slug Test



000437  
12/1/52

000438  
JK  
12/15/92



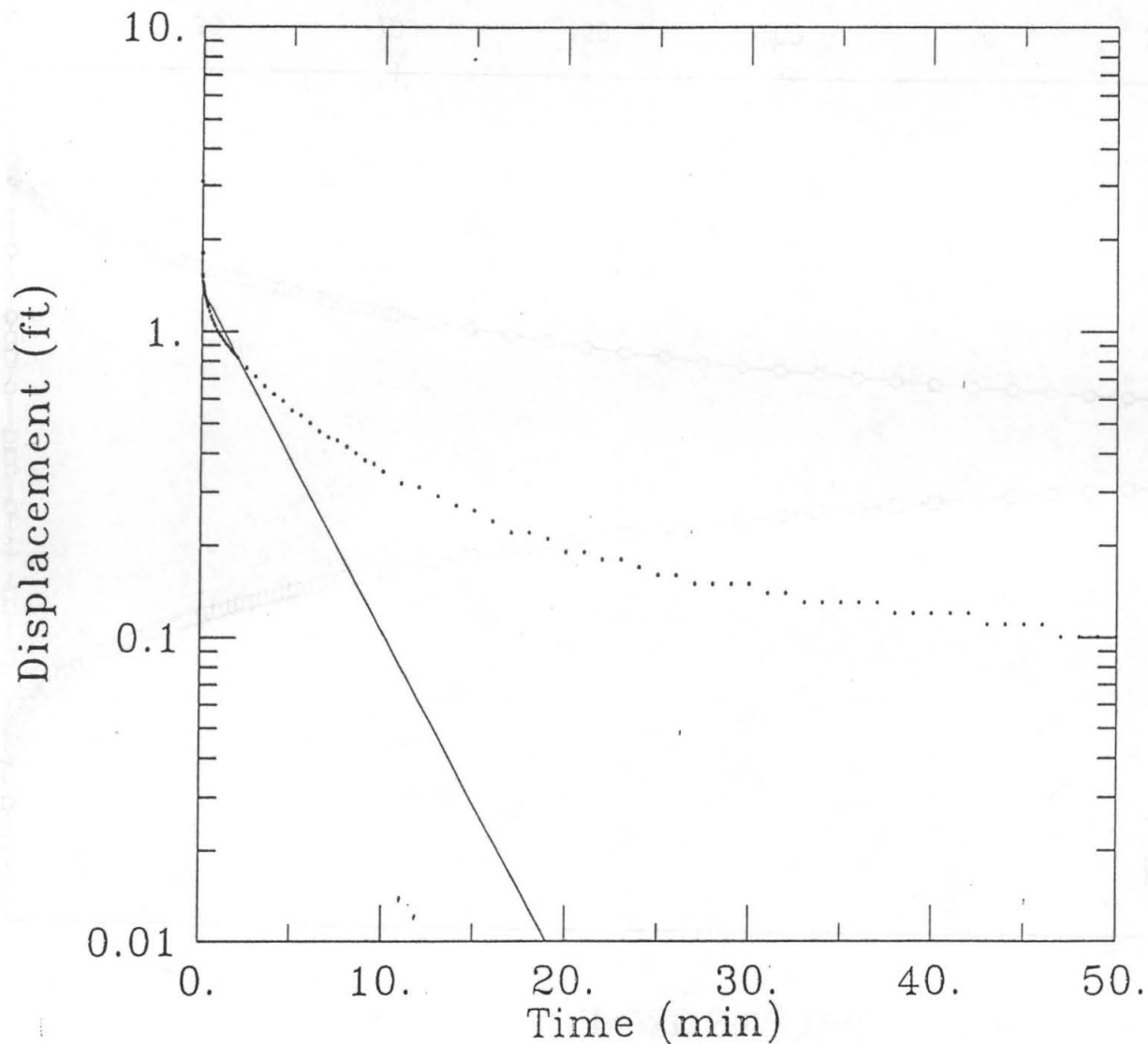
DATA SET:  
P28SSI.DAT HW-2SS  
10/18/95

AQUIFER MODEL:  
Unconfined  
SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 9/15/95

TEST DATA:  
H0 = 1.91 ft  
rc = 0.09333 ft  
rw = 0.25 ft  
L = 10. ft  
b = 53. ft  
H = 25.5 ft

PARAMETER ESTIMATES:  
K = 0.000469 ft/min  
y0 = 1.84 ft



DATA SET:  
P28SS0.DAT *HW-255*  
10/18/95

AQUIFER MODEL:  
Unconfined  
SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/15/95

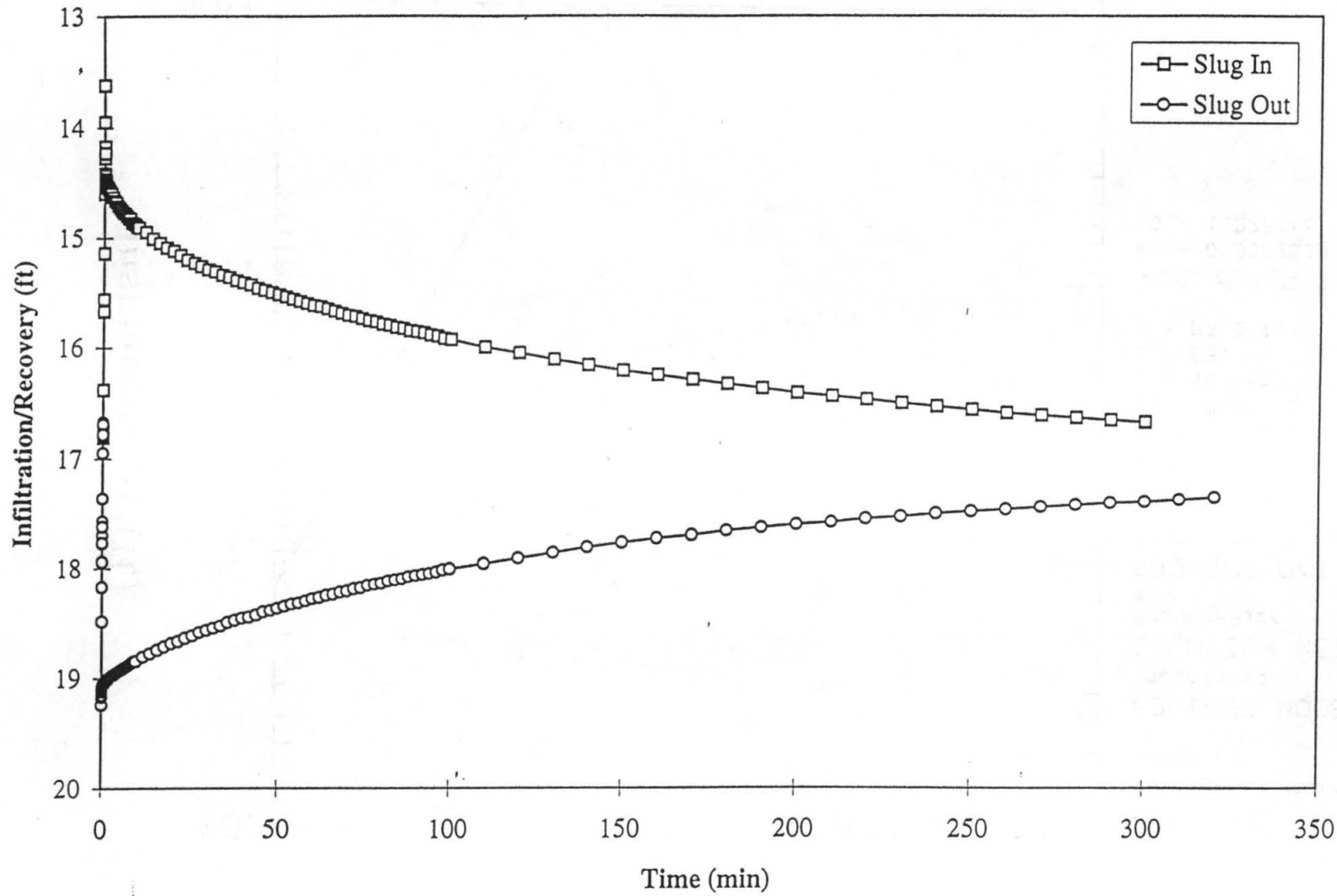
TEST DATA:  
H0 = 3.1 ft  
rc = 0.08333 ft  
rw = 0.25 ft  
L = 10. ft  
b = 53. ft  
H = 25.5 ft

PARAMETER ESTIMATES:  
K = 0.0002502 ft/min  
y0 = 1.376 ft

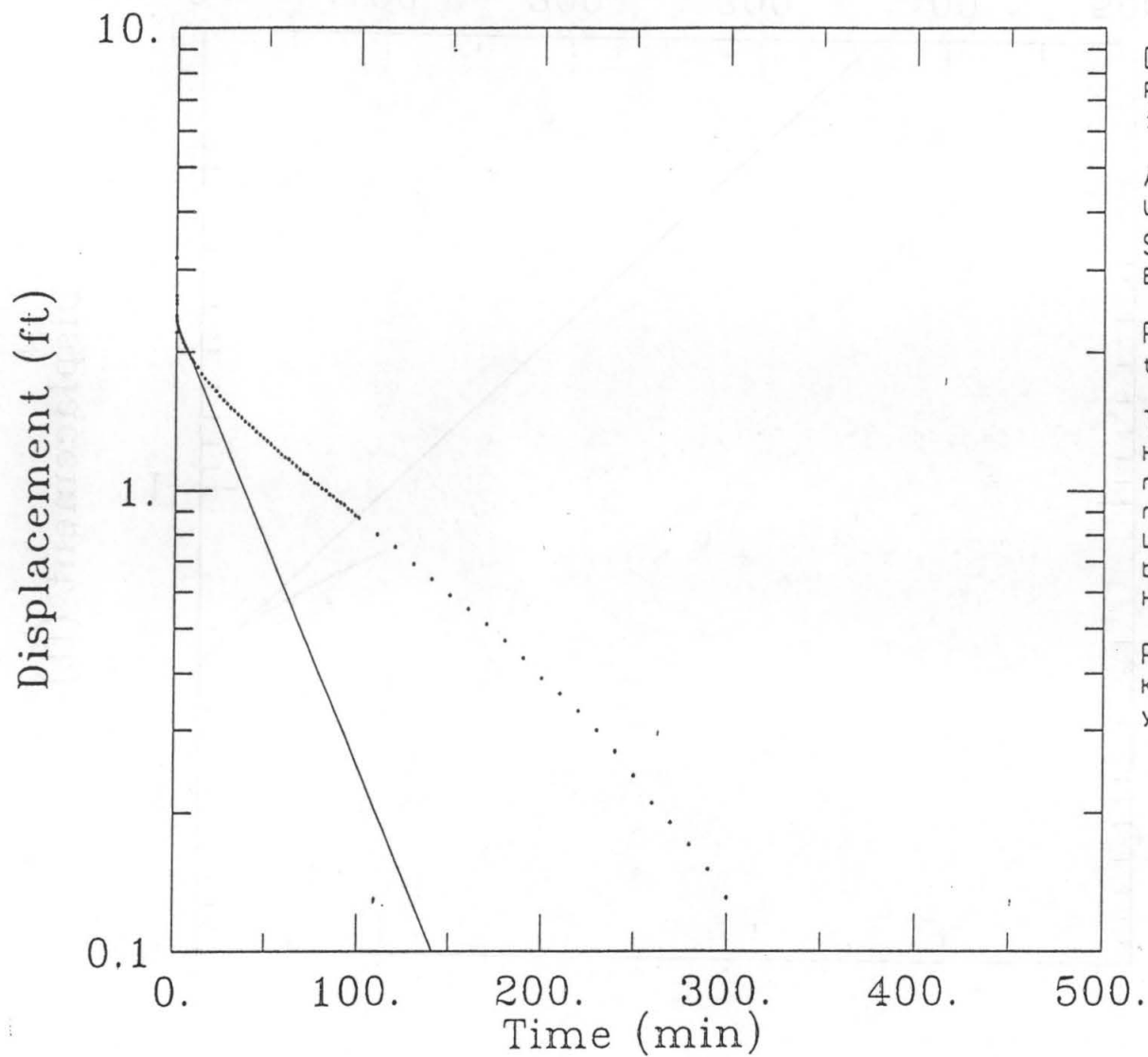


MW-2SD  
**P-28D Slug Test**

JH 12/19/92



000410  
12/19/92



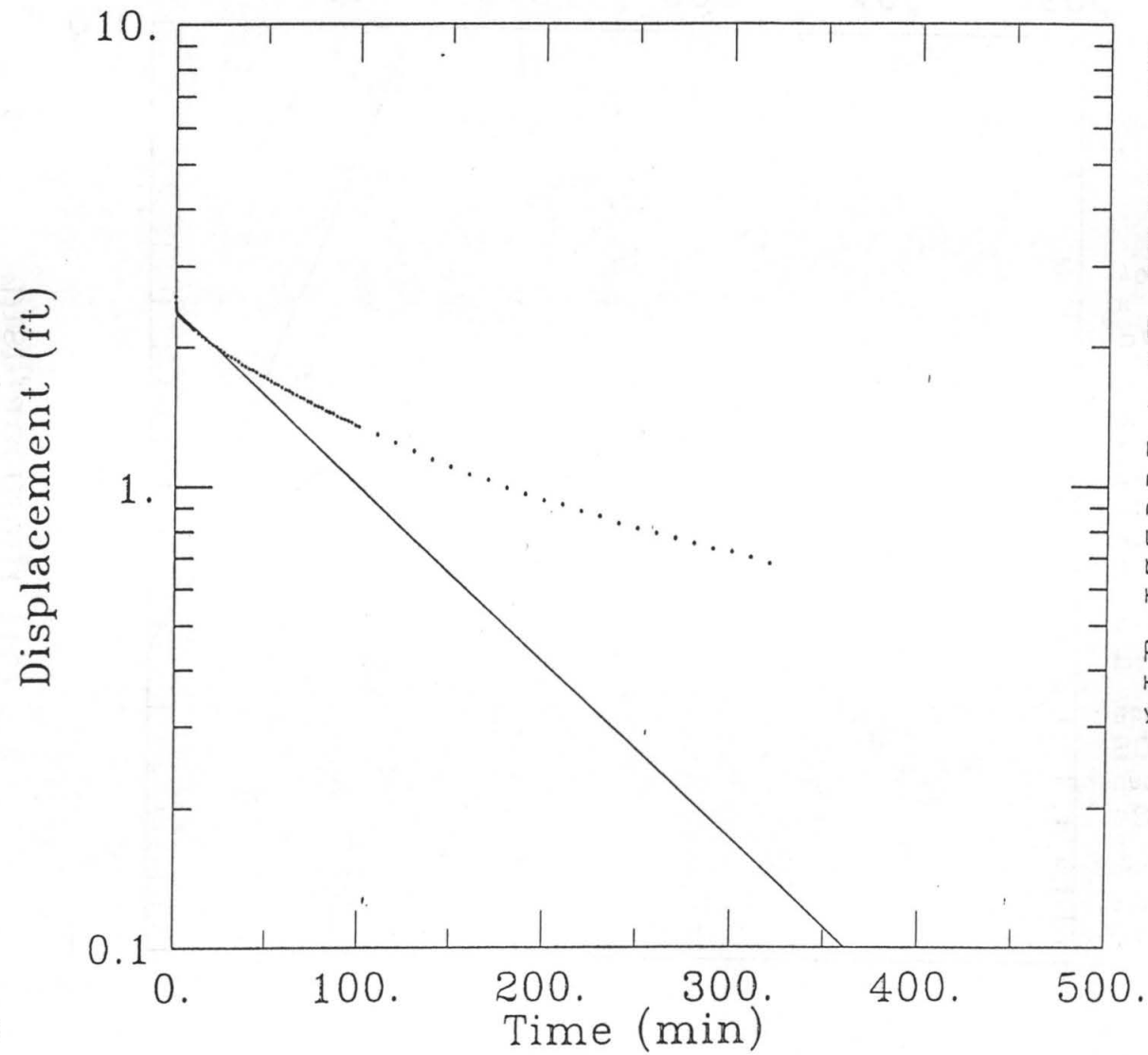
DATA SET:  
P28DSI.DAT *rw-250*  
10/18/95

AQUIFER MODEL:  
Unconfined  
SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 10/13/95

TEST DATA:  
H0 = 3.18 ft  
rc = 0.0833 ft  
rw = 0.25 ft  
L = 10. ft  
b = 53. ft  
H = 53. ft

PARAMETER ESTIMATES:  
K = 2.942E-05 ft/min  
y0 = 2.316 ft



DATA SET:  
P28DS0.DAT *HW-25D*  
10/18/95

AQUIFER MODEL:  
Unconfined  
SOLUTION METHOD:  
Bouwer-Rice

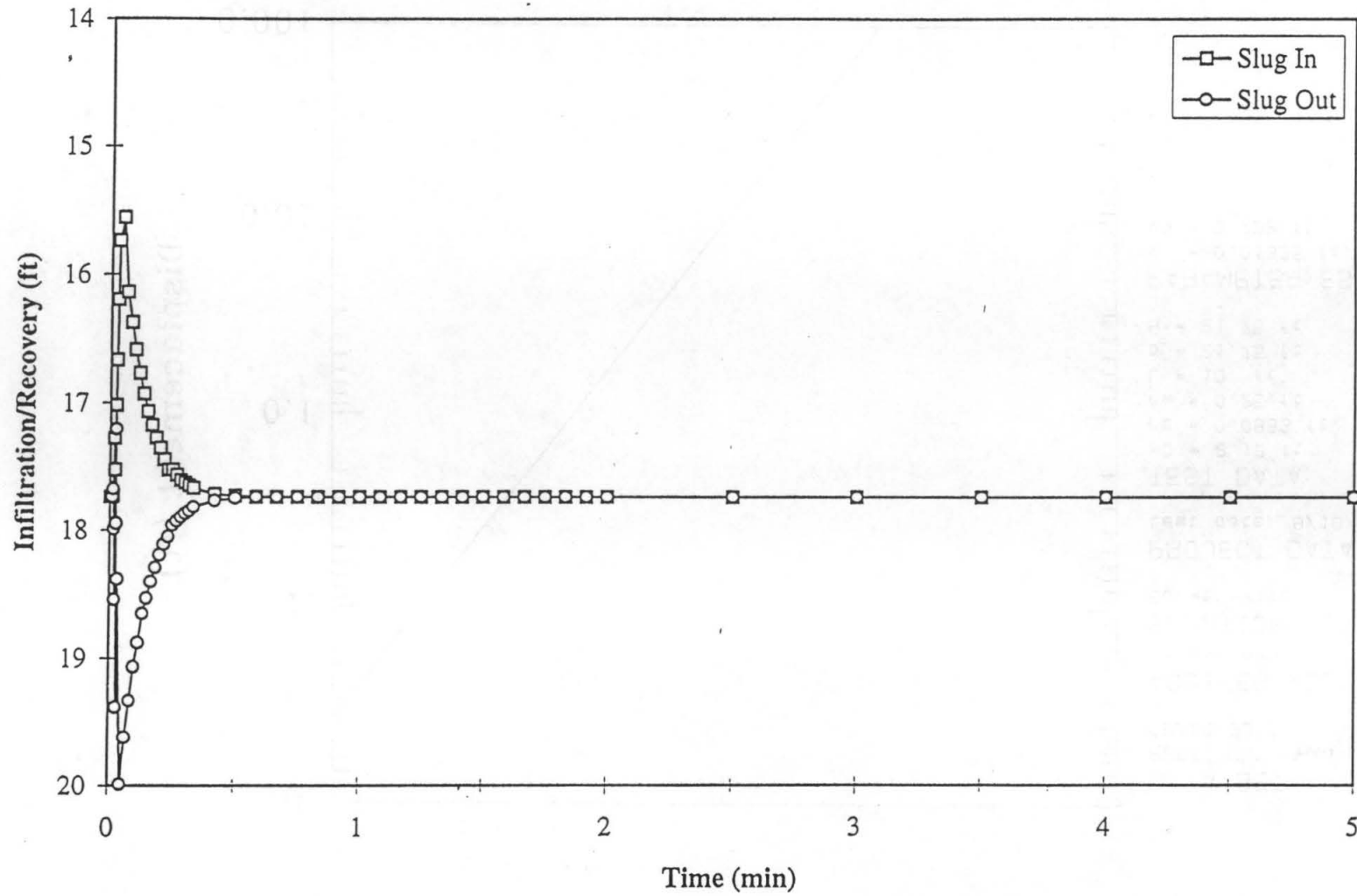
PROJECT DATA:  
test date: 10/13/95

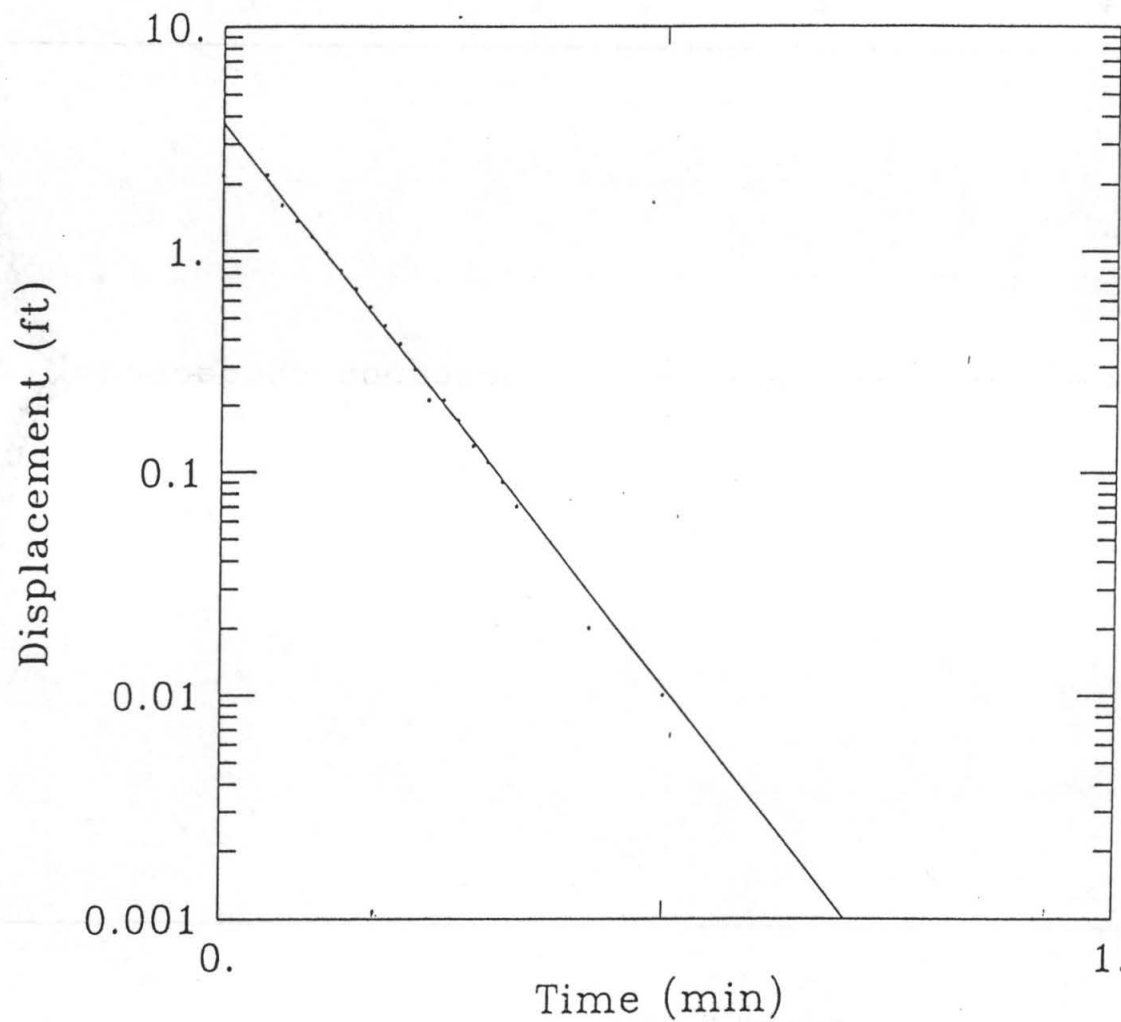
TEST DATA:  
H0 = 2.57 ft  
rc = 0.0833 ft  
rw = 0.25 ft  
L = 10. ft  
b = 53. ft  
H = 53. ft

PARAMETER ESTIMATES:  
K = 1.162E-05 ft/min  
y0 = 2.408 ft

MW-27  
P-26 Slug Test

JH 12/19/92





DATA SET:  
P26SI.DAT *rw-27*  
09/25/95

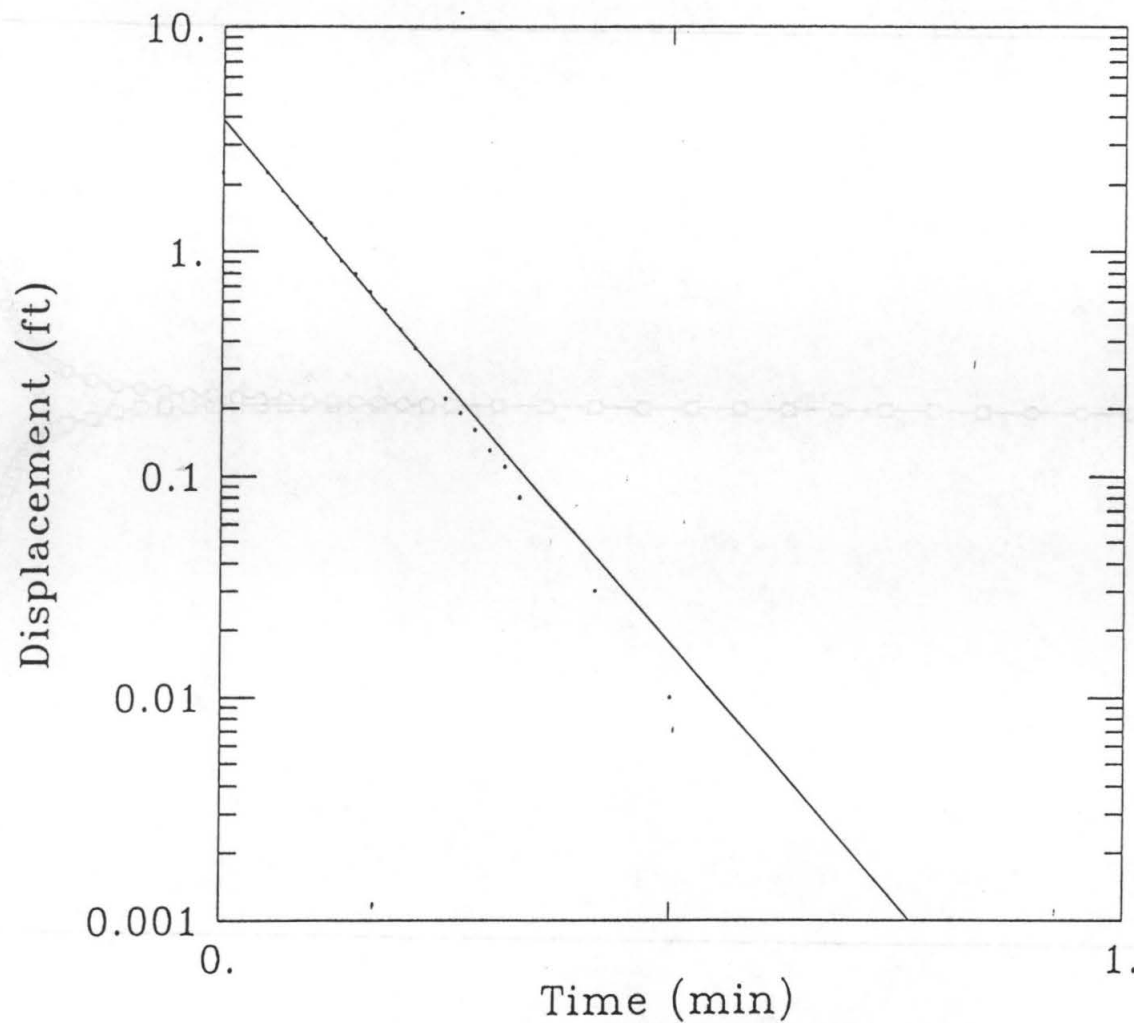
AQUIFER MODEL:  
Unconfined  
SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/10/95

TEST DATA:  
 $H_0 = 2.18$  ft  
 $r_c = 0.0833$  ft  
 $r_w = 0.25$  ft  
 $L = 10.$  ft  
 $b = 21.75$  ft  
 $H = 21.75$  ft

PARAMETER ESTIMATES:  
 $K = 0.01335$  ft/min  
 $y_0 = 3.732$  ft

000436  
JH  
12/19/97



DATA SET:  
P26SO.DAT *rw-27*  
09/25/95

AQUIFER MODEL:  
Unconfined  
SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/10/95

TEST DATA:  
H0 = 2.25 ft  
rc = 0.0833 ft  
rw = 0.25 ft  
L = 10. ft  
b = 21.75 ft  
H = 21.75 ft

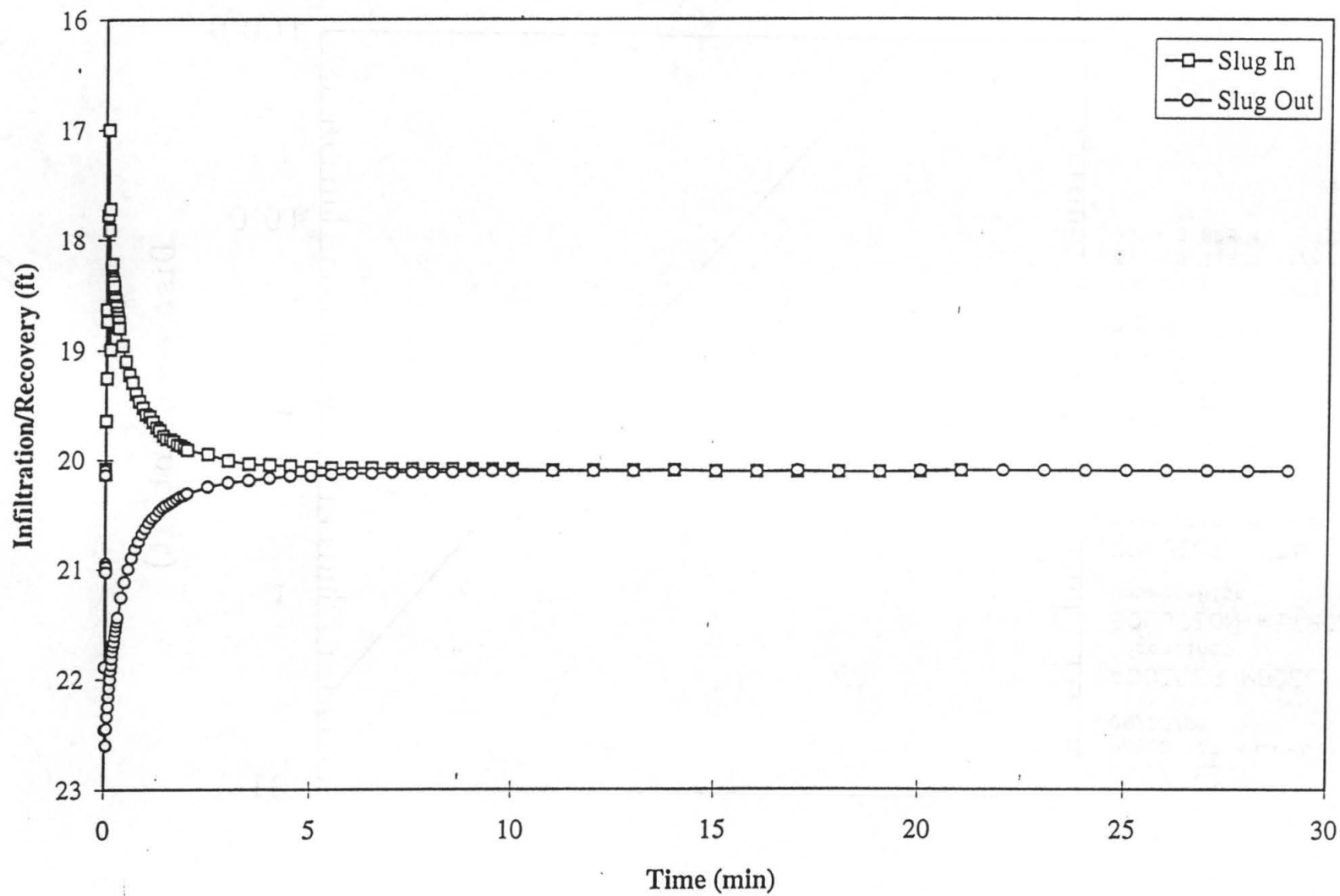
PARAMETER ESTIMATES:  
K = 0.01237 ft/min  
y0 = 3.896 ft

graph

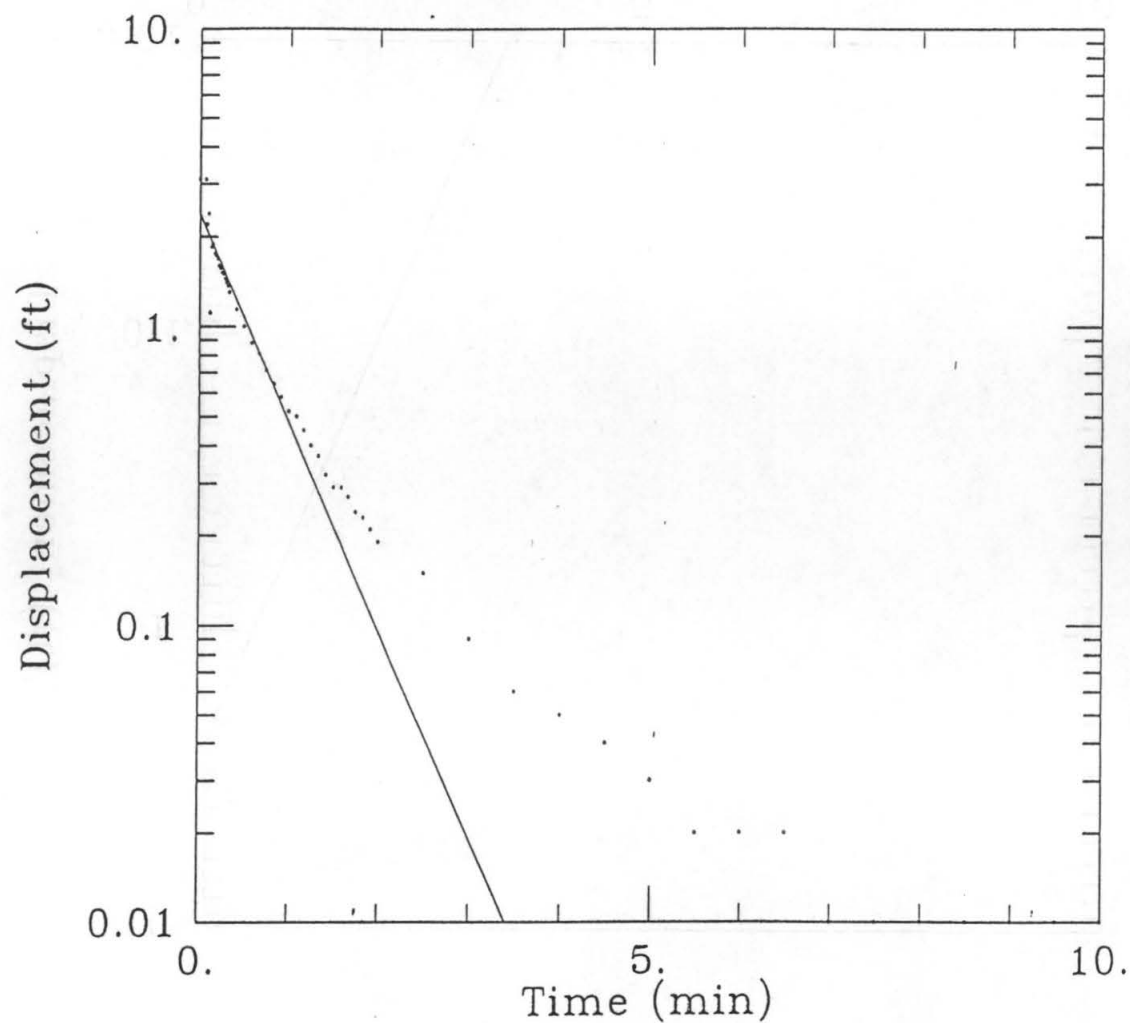
MW-28

P-25 Slug Test

12/19/97



000432  
12/9/97



DATA SET:  
P25SI.DAT *rw-28*  
09/22/95

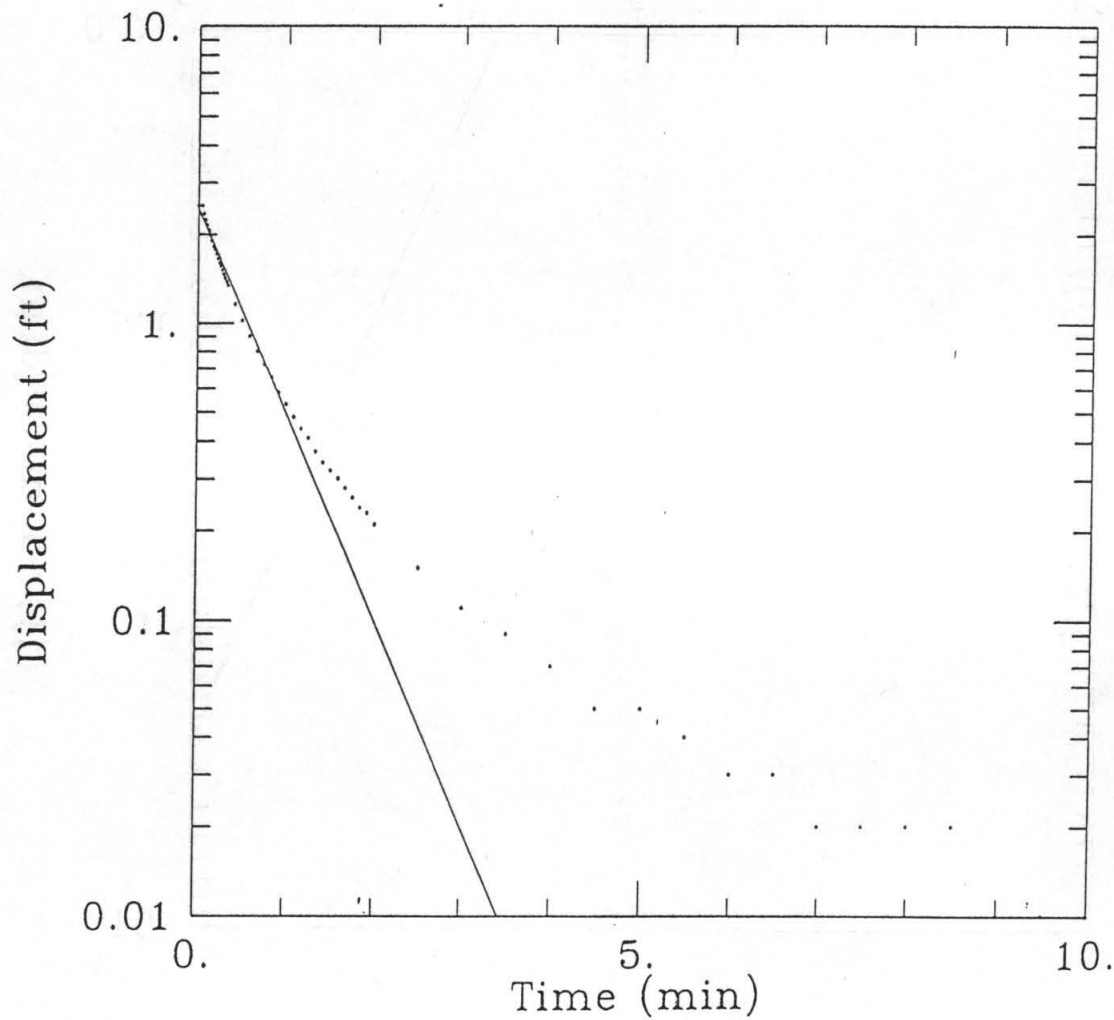
AQUIFER MODEL:  
Unconfined  
SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/1/95

TEST DATA:  
H0 = 3.1 ft  
rc = 0.08333 ft  
rw = 0.25 ft  
L = 10. ft  
b = 40.5 ft  
H = 40.5 ft

PARAMETER ESTIMATES:  
K = 0.002041 ft/min  
y0 = 2.38 ft





DATA SET:  
P2550.DAT MW-28  
09/22/95

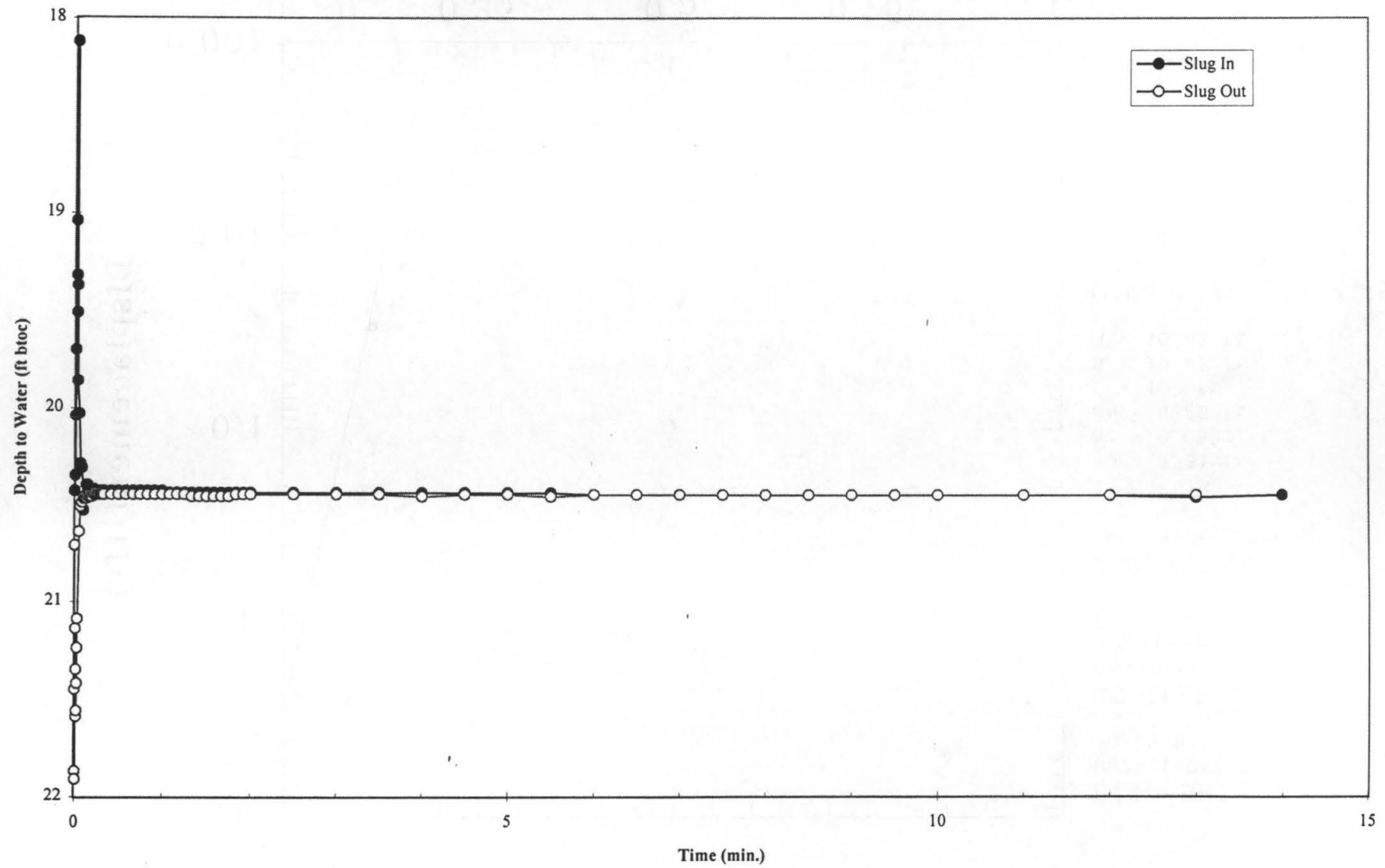
AQUIFER MODEL:  
Unconfined  
SOLUTION METHOD:  
Bouwer-Rice

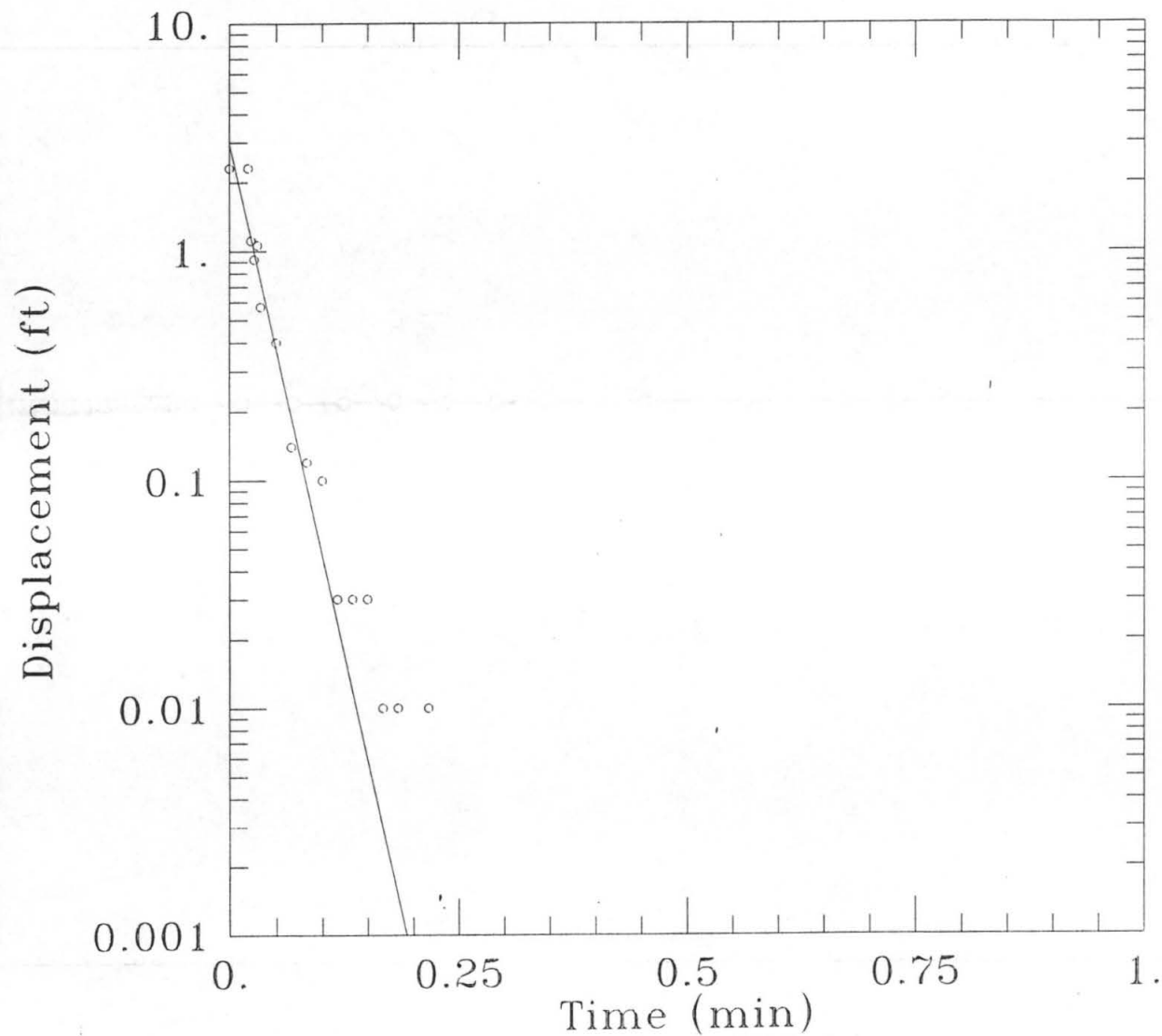
PROJECT DATA:  
test date: 8/1/95

TEST DATA:  
H0 = 2.5 ft  
rc = 0.08333 ft  
rw = 0.25 ft  
L = 10. ft  
b = 40.5 ft  
H = 40.5 ft

PARAMETER ESTIMATES:  
K = 0.002031 ft/min  
y0 = 2.438 ft

# MW-29 Aquifer Tests





DATA SET:  
MW29SI.DAT  
10/23/97

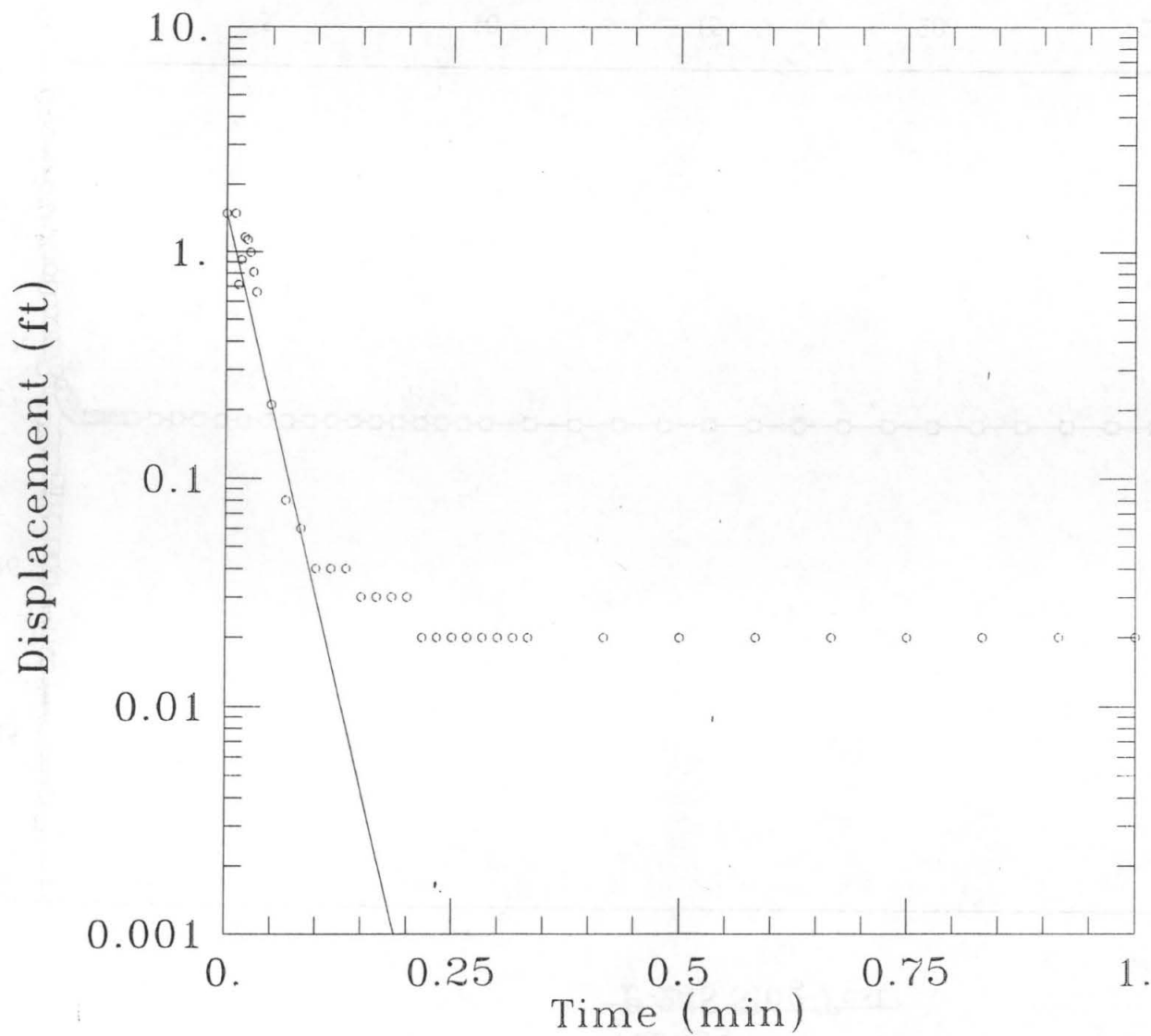
AQUIFER MODEL:  
Confined

SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/16/97

TEST DATA:  
H0 = 2.31 ft  
rc = 0.0833 ft  
rw = 0.25 ft  
L = 10. ft  
b = 10.43 ft  
H = 10.43 ft

PARAMETER ESTIMATES:  
K = 0.1391 ft/min  
y0 = 2.955 ft



DATA SET:  
MW29S0.DAT  
10/23/97

AQUIFER MODEL:  
Confined  
SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/16/97

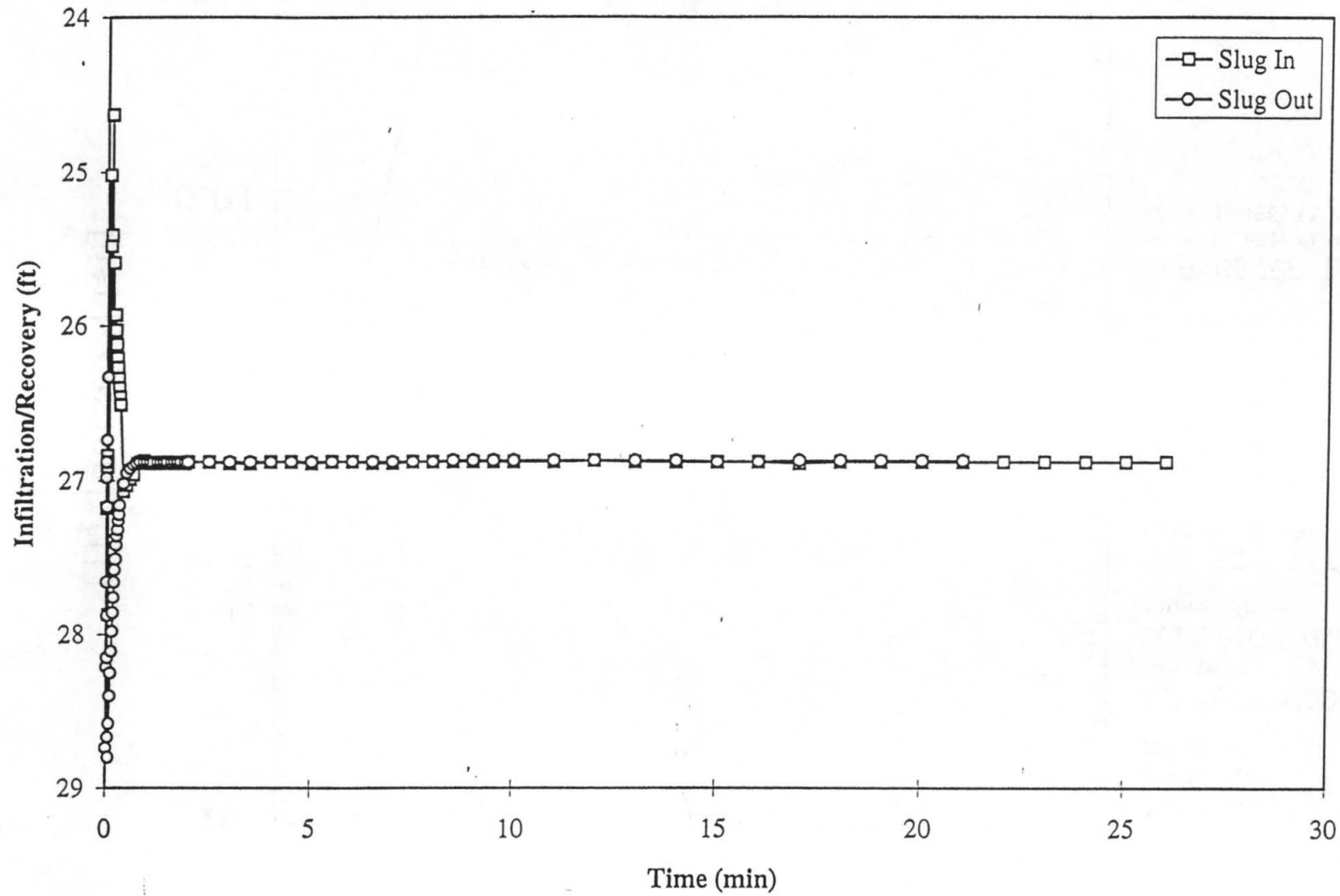
TEST DATA:  
 $H_0 = 1.48$  ft  
 $r_c = 0.0833$  ft  
 $r_w = 0.25$  ft  
 $L = 10.$  ft  
 $b = 10.43$  ft  
 $H = 10.43$  ft

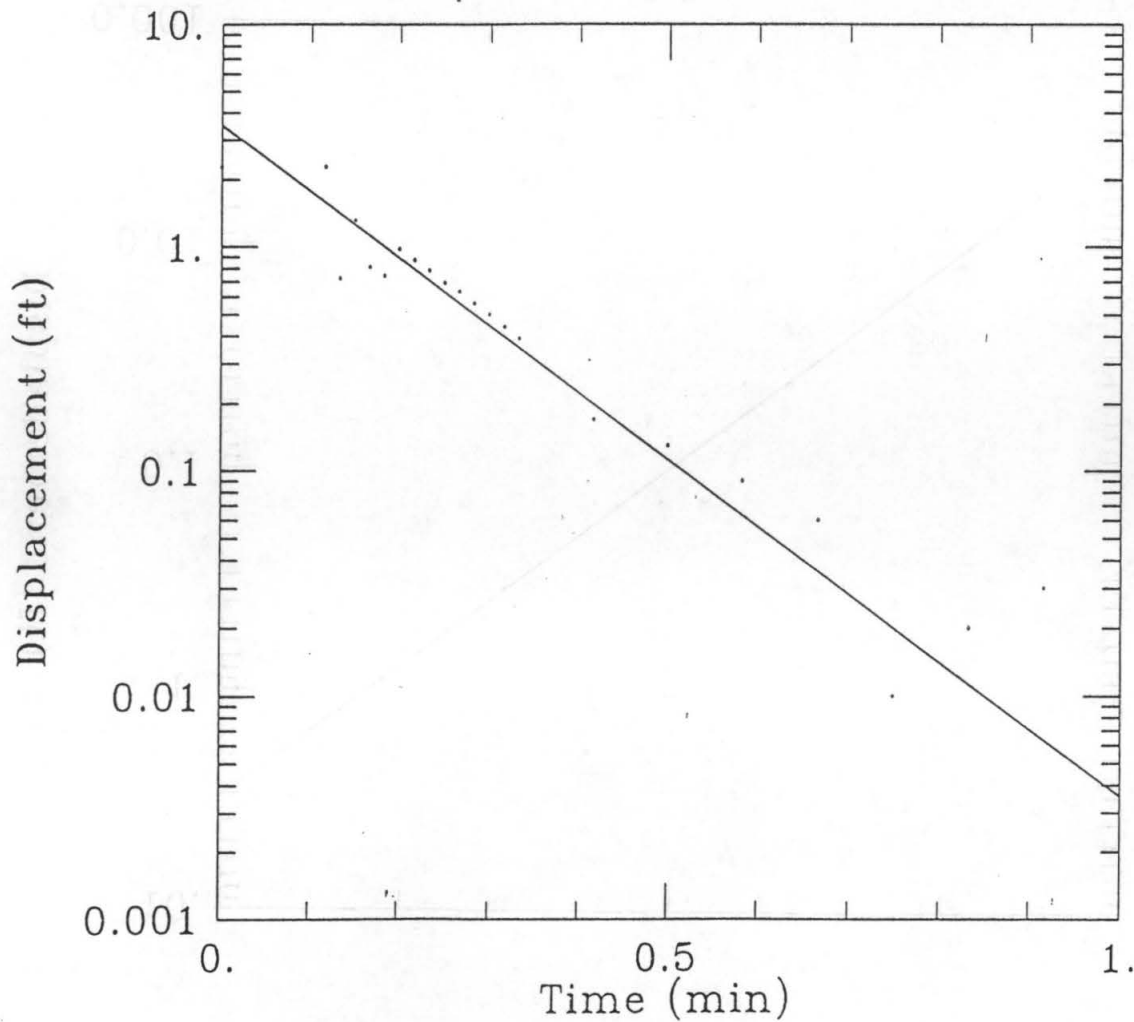
PARAMETER ESTIMATES:  
 $K = 0.131$  ft/min  
 $y_0 = 1.486$  ft

graph

MW-305

~~P-24S~~ Slug Test





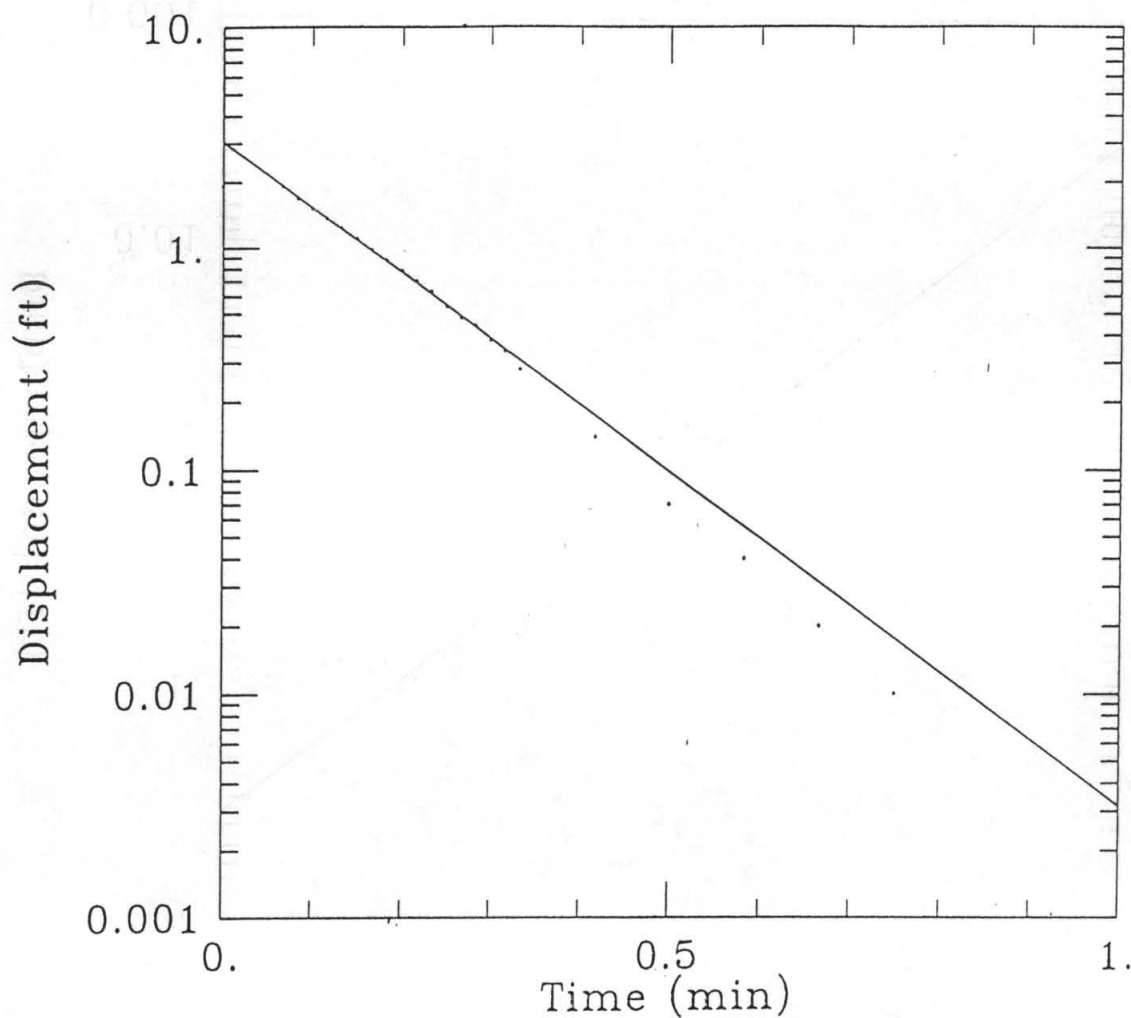
DATA SET:  
P24SSI.DAT *rw-305*  
09/21/95

AQUIFER MODEL:  
Unconfined  
SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/9/95

TEST DATA:  
H0 = 2.27 ft  
rc = 0.08333 ft  
rw = 0.25 ft  
L = 10. ft  
b = 36. ft  
H = 11. ft

PARAMETER ESTIMATES:  
K = 0.01977 ft/min  
y0 = 3.505 ft



DATA SET:  
P24SS0.DAT *rw-305* *STP*  
09/21/95

AQUIFER MODEL:  
Unconfined  
SOLUTION METHOD:  
Bouwer-Rice

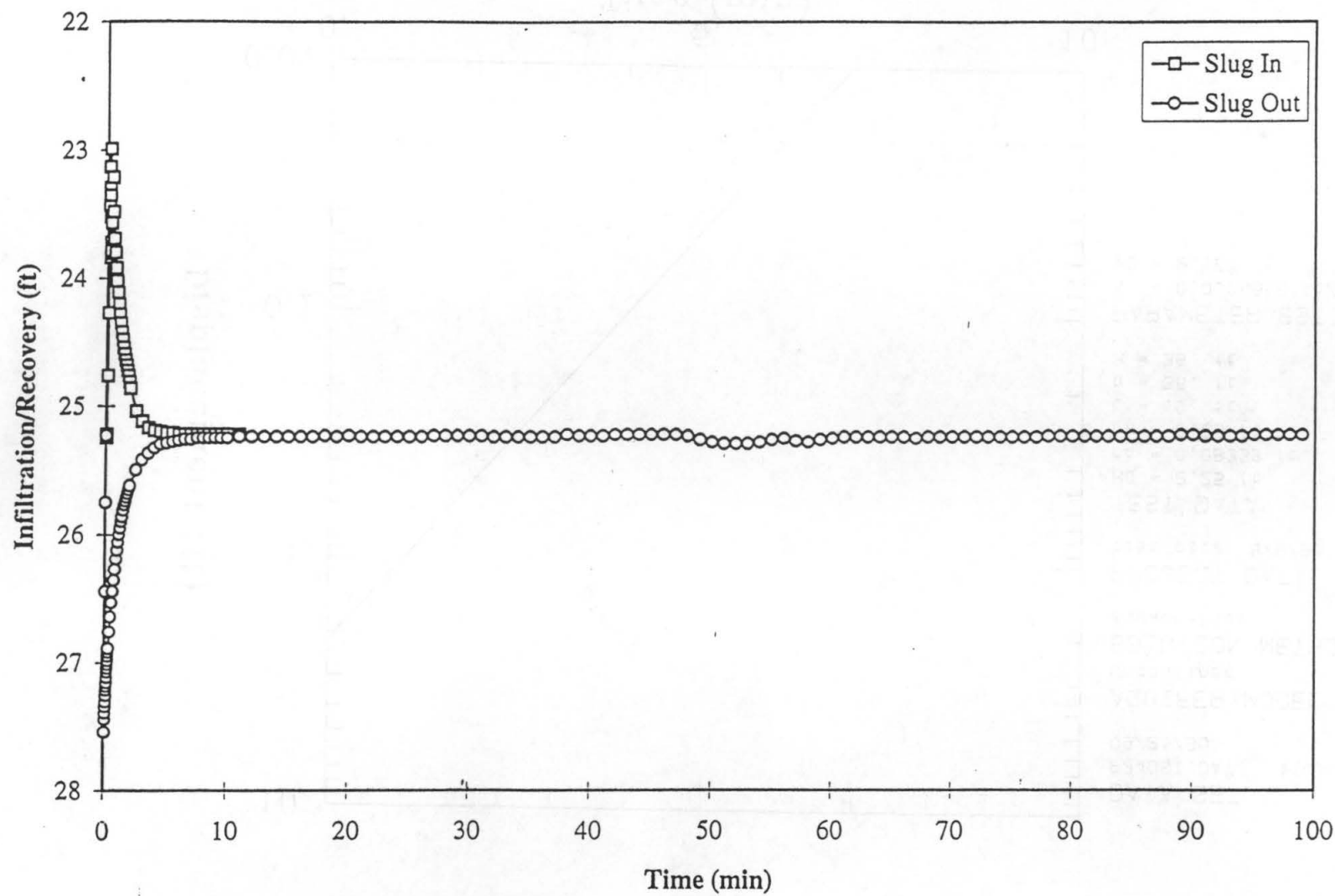
PROJECT DATA:  
test date: 8/9/95

TEST DATA:  
H0 = 1.92 ft  
rc = 0.08333 ft  
rw = 0.25 ft  
L = 10. ft  
b = 36. ft  
H = 11. ft

PARAMETER ESTIMATES:  
K = 0.01973 ft/min  
y0 = 3.044 ft

MW-30D  
P-24D Slug Test

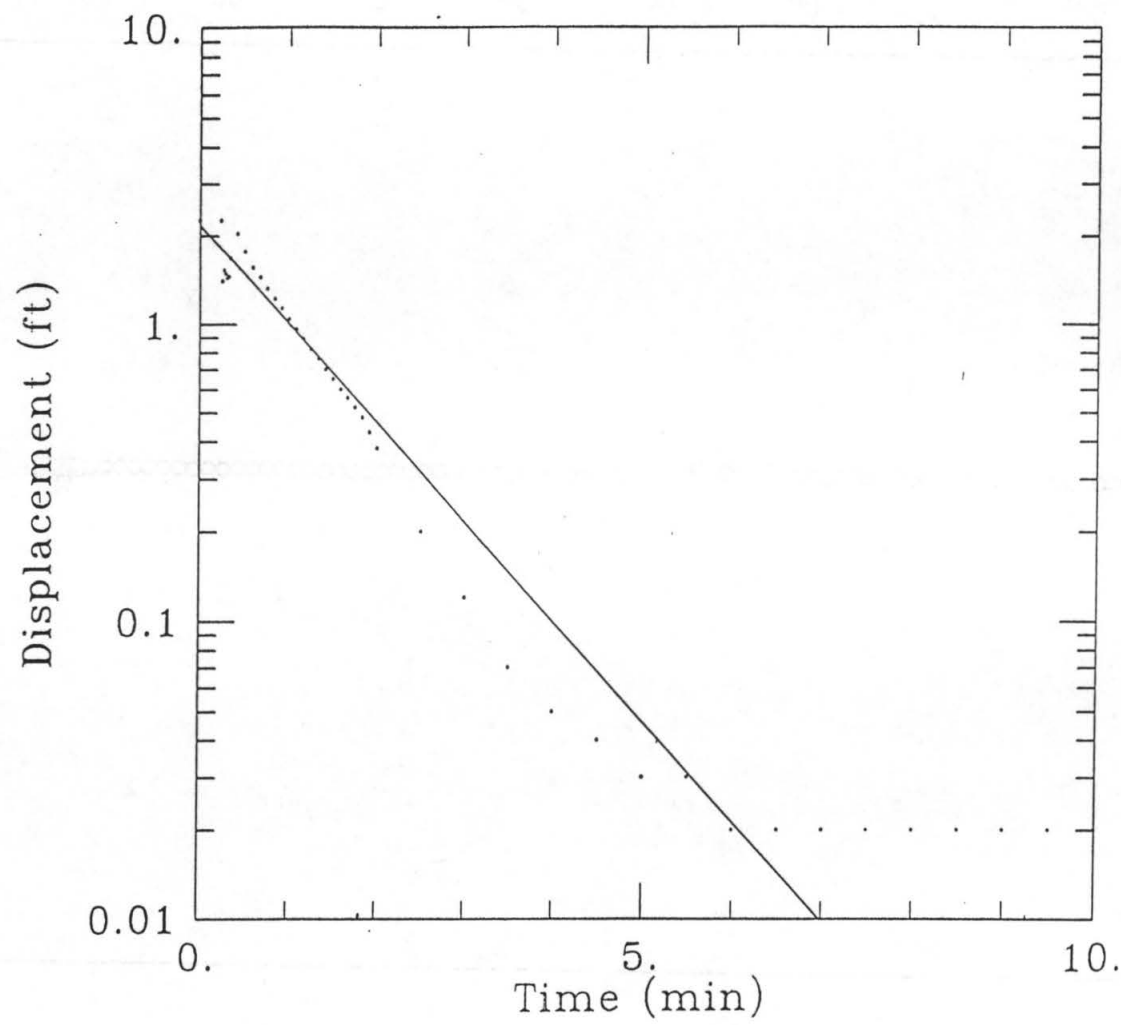
(17) 12/19/47



000428-  
12/19/47



000429  
149/52



DATA SET:  
P240SI.DAT      HW-300  
09/21/95

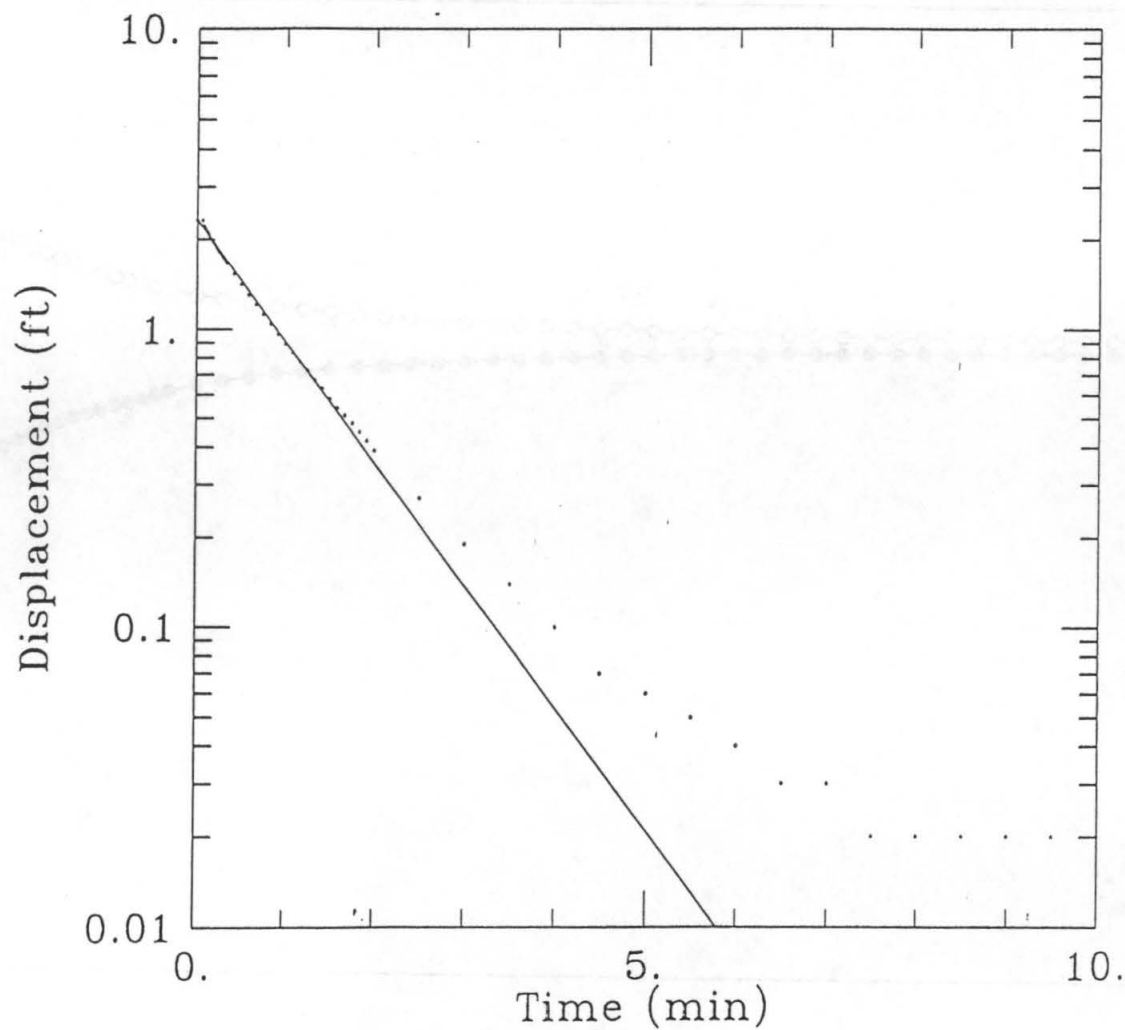
AQUIFER MODEL:  
Unconfined

SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/9/95

TEST DATA:  
H0 = 2.25 ft  
rc = 0.08333 ft  
rw = 0.25 ft  
L = 10. ft  
b = 36. ft  
H = 36. ft

PARAMETER ESTIMATES:  
K = 0.0009596 ft/min  
y0 = 2.161 ft



DATA SET:  
P24DS0.DAT MW-30D  
09/21/95

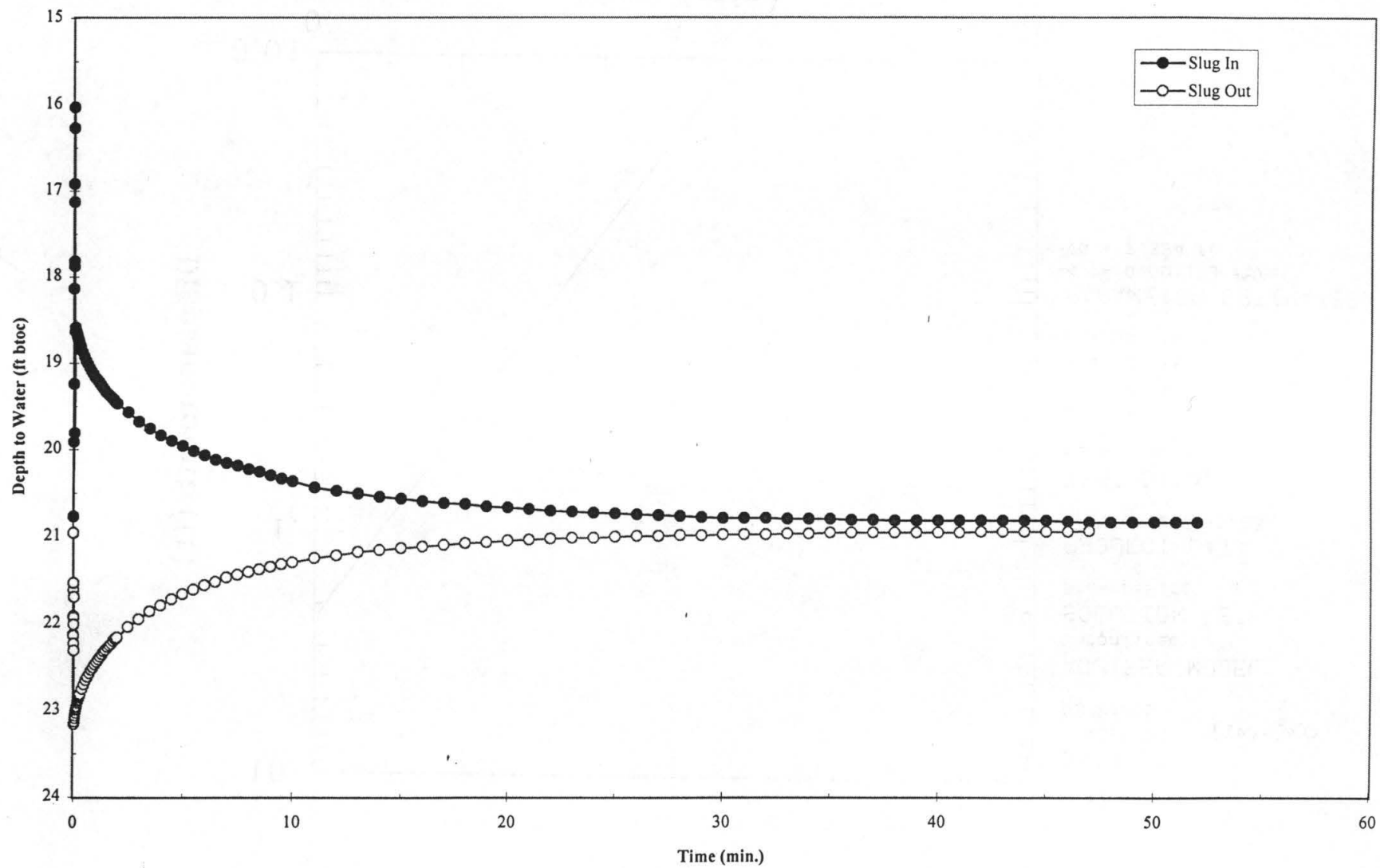
AQUIFER MODEL:  
Unconfined  
SOLUTION METHOD:  
Bouwer-Rice

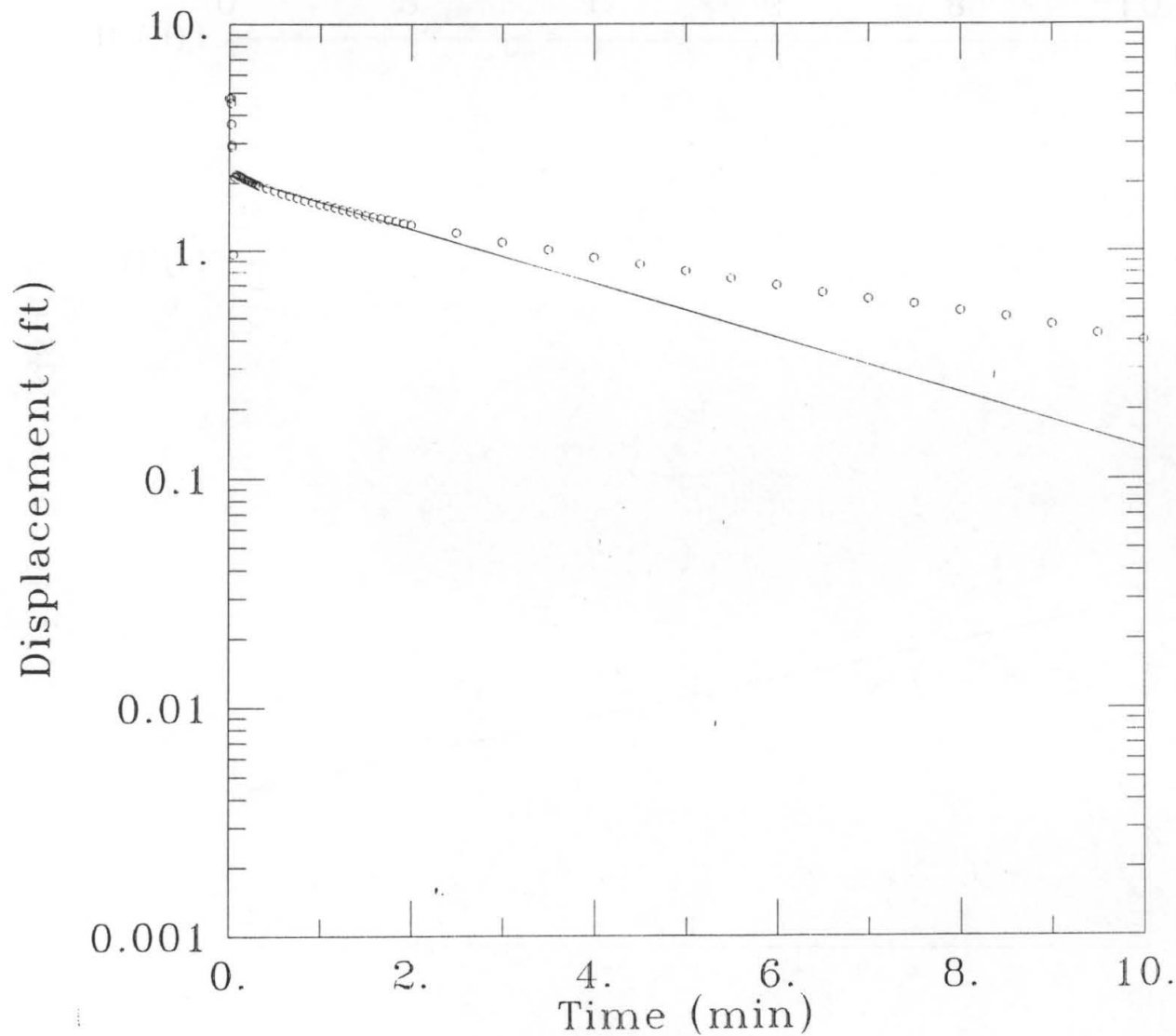
PROJECT DATA:  
test date: 8/9/95

TEST DATA:  
H0 = 2.31 ft  
rc = 0.08333 ft  
rw = 0.25 ft  
L = 10. ft  
b = 36. ft  
H = 36. ft

PARAMETER ESTIMATES:  
K = 0.001173 ft/min  
y0 = 2.324 ft

# MW-31 Aquifer Tests





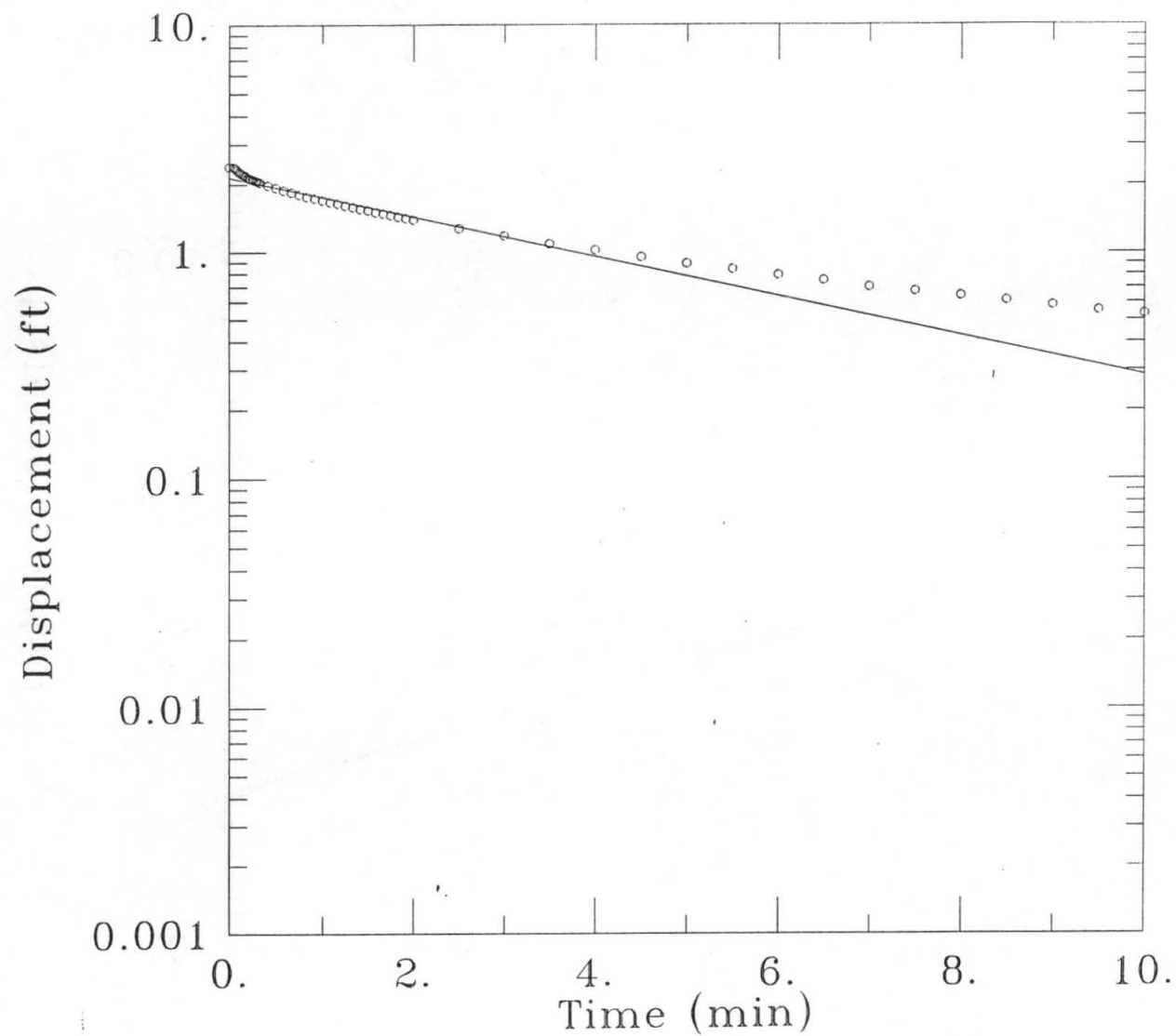
DATA SET:  
MW31SI.DAT  
10/23/97

AQUIFER MODEL:  
Unconfined  
SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/17/97

TEST DATA:  
 $H_0 = 4.74$  ft  
 $r_c = 0.0833$  ft  
 $r_w = 0.25$  ft  
 $L = 10.$  ft  
 $b = 28.53$  ft  
 $H = 28.53$  ft

PARAMETER ESTIMATES:  
 $K = 0.000331$  ft/min  
 $y_0 = 2.163$  ft



DATA SET:  
MW31SO.DAT  
10/23/97

AQUIFER MODEL:  
Unconfined  
SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/17/97

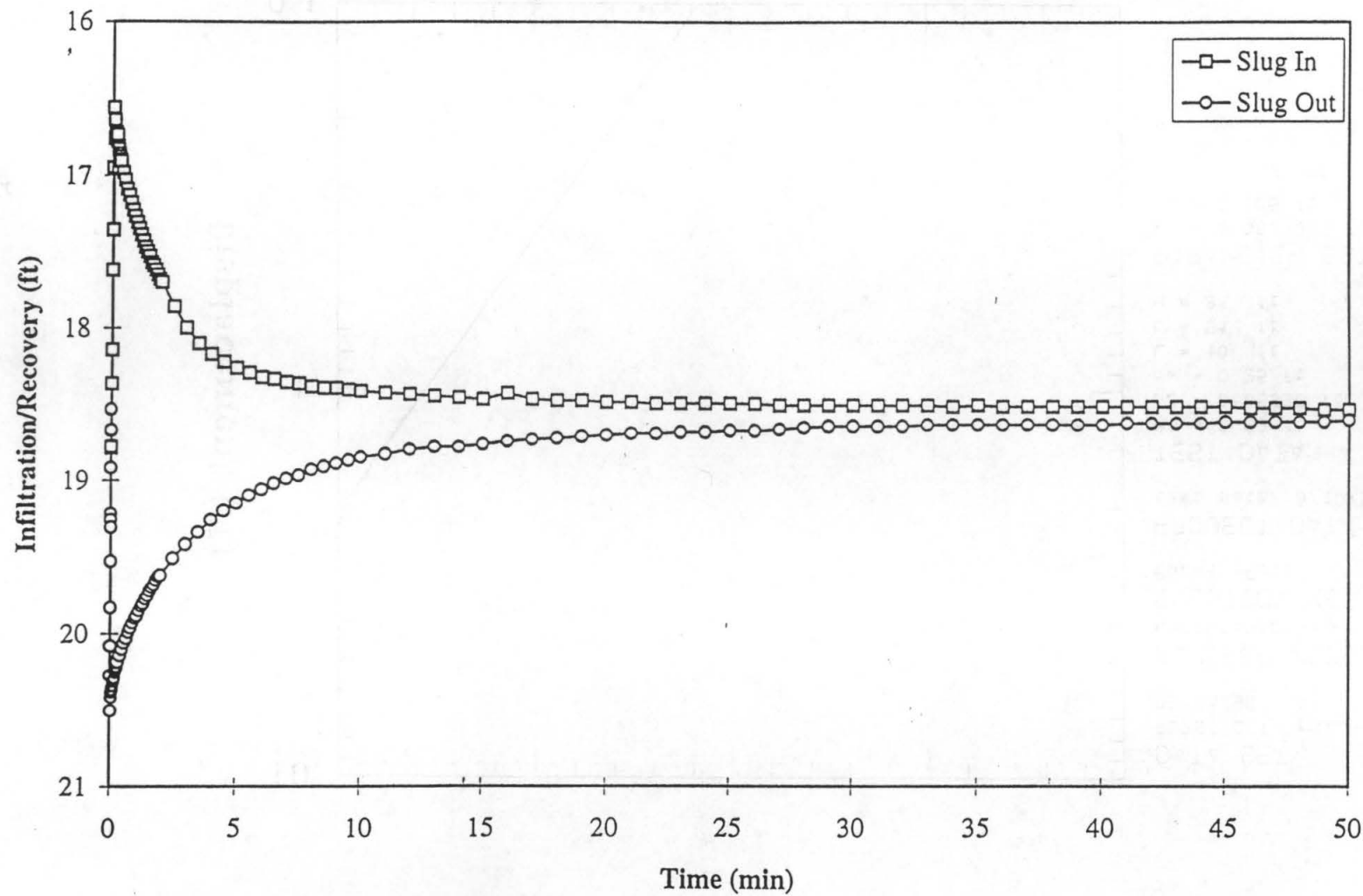
TEST DATA:  
H0 = 2.39 ft  
rc = 0.0833 ft  
rw = 0.25 ft  
L = 10. ft  
b = 28.53 ft  
H = 28.53 ft

PARAMETER ESTIMATES:  
K = 0.0002417 ft/min  
y0 = 2.144 ft

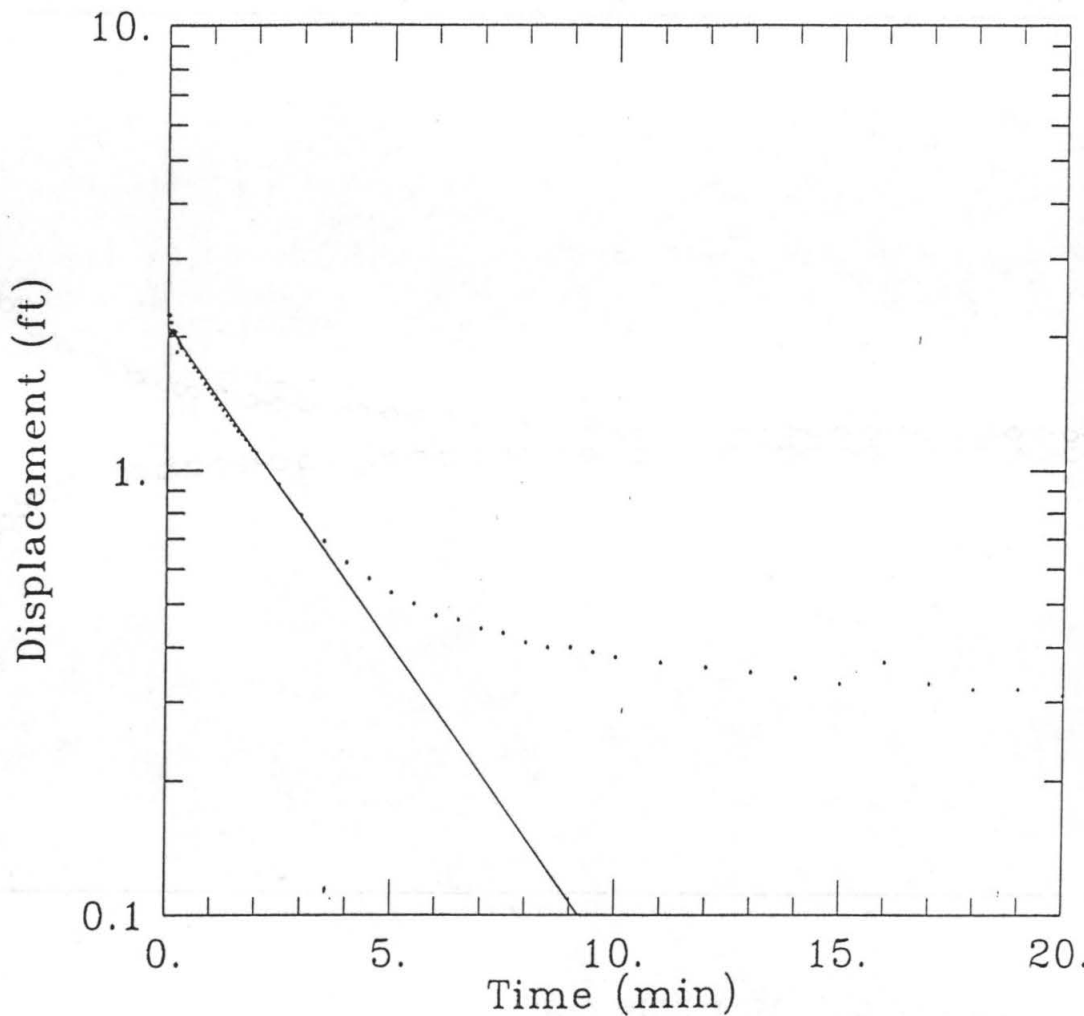
graph

MW-32  
P-7 Slug Test

12/19/97



000374  
12/19/97



DATA SET:  
P07SI.DAT *rw-32*  
09/25/95

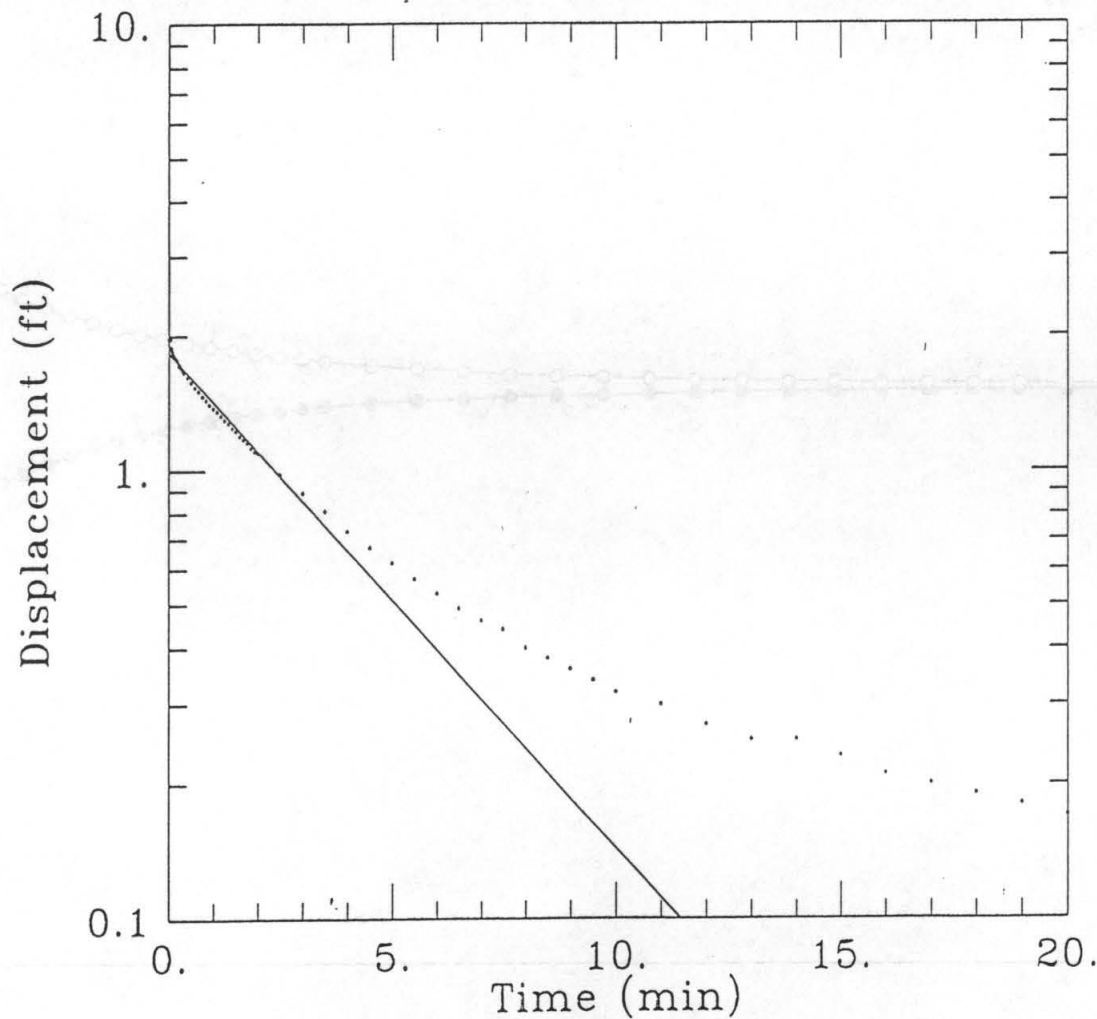
AQUIFER MODEL:  
Unconfined

SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/10/95

TEST DATA:  
H0 = 2.23 ft  
rc = 0.08333 ft  
rw = 0.25 ft  
L = 10. ft  
b = 31. ft  
H = 31. ft

PARAMETER ESTIMATES:  
K = 0.0004025 ft/min  
y0 = 2.106 ft



DATA SET:  
P0750.DAT *rw-32*  
09/25/95

AQUIFER MODEL:  
Unconfined  
SOLUTION METHOD:  
Bouwer-Rice

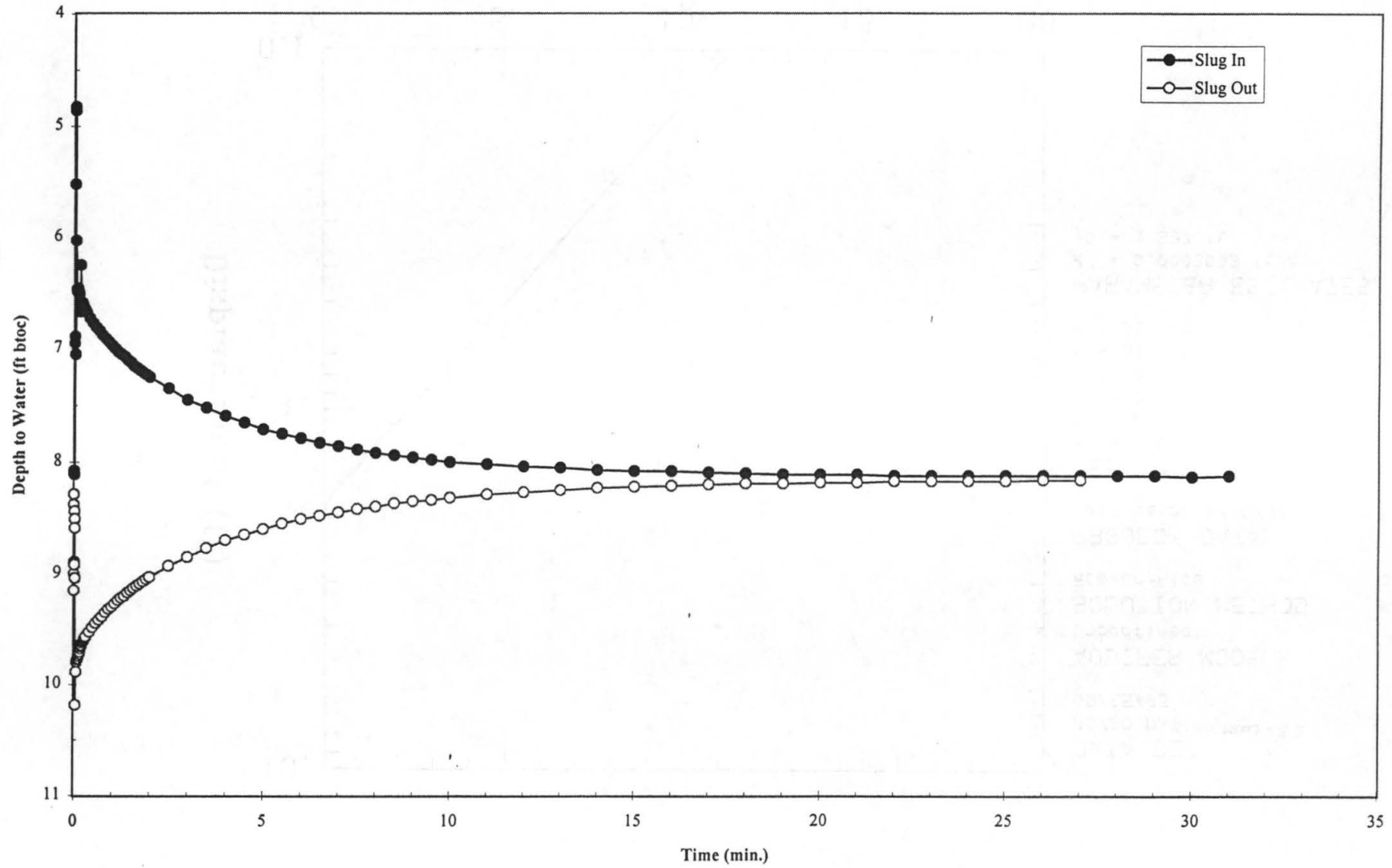
PROJECT DATA:  
test date: 8/10/95

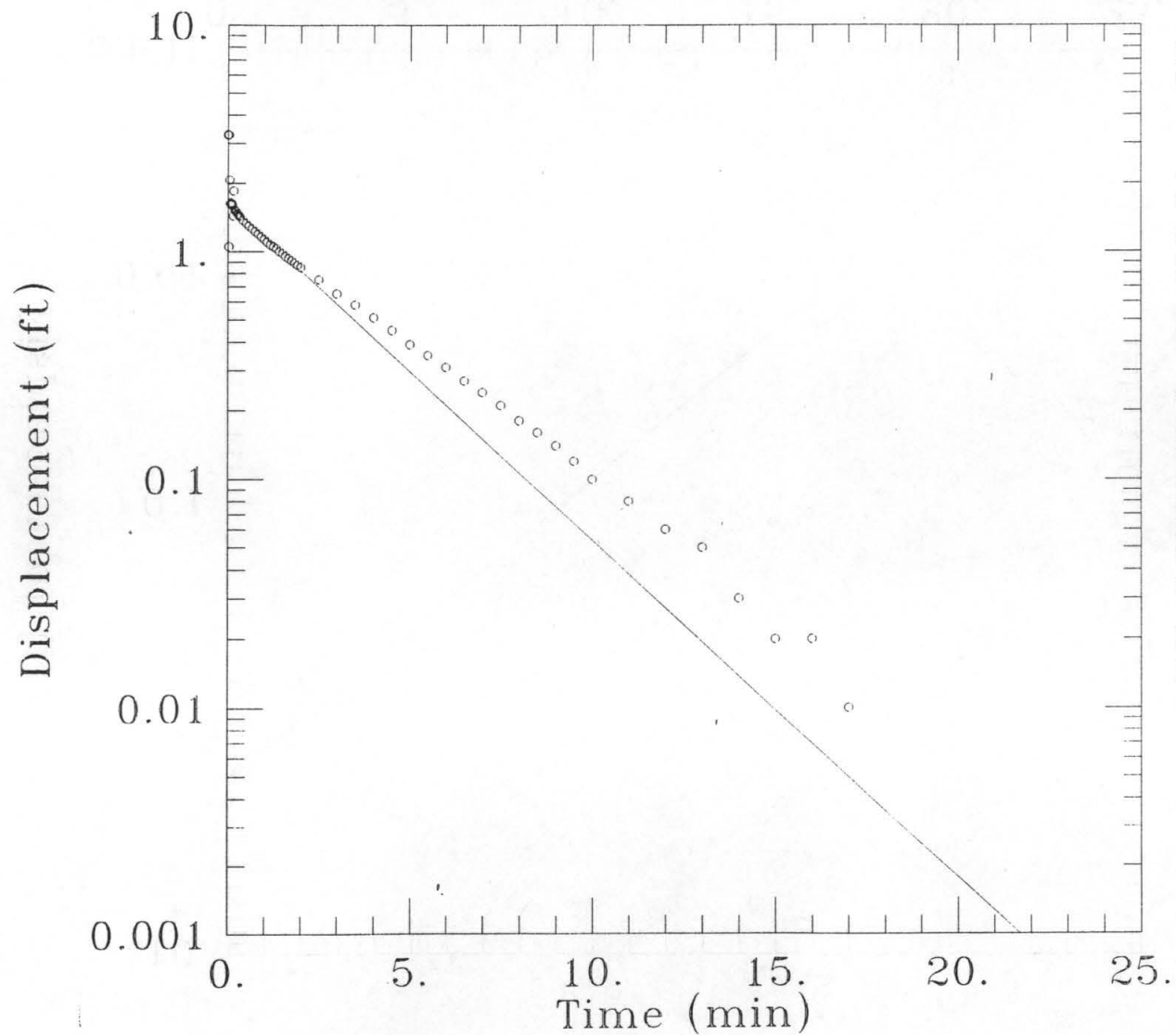
TEST DATA:  
H0 = 1.97 ft  
rc = 0.08333 ft  
rw = 0.25 ft  
L = 10. ft  
b = 31. ft  
H = 31. ft

PARAMETER ESTIMATES:  
K = 0.0003093 ft/min  
y0 = 1.827 ft



# MW-33A Aquifer Tests





DATA SET:  
MW33ASI.DAT  
10/23/97

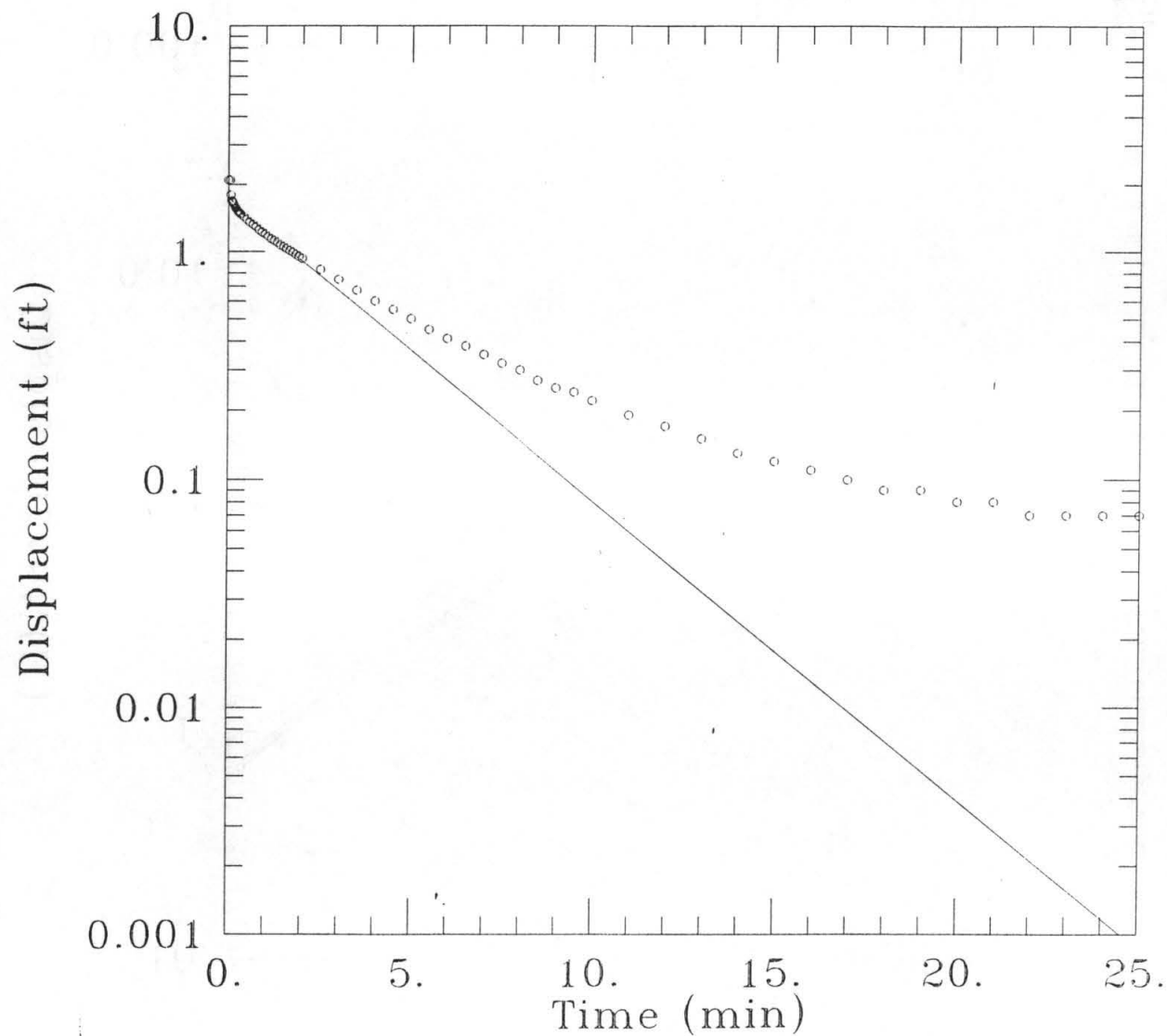
AQUIFER MODEL:  
Confined

SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/23/97

TEST DATA:  
H0 = 3.27 ft  
rc = 0.0833 ft  
rw = 0.25 ft  
L = 10. ft  
b = 33.33 ft  
H = 33.33 ft

PARAMETER ESTIMATES:  
K = 0.000419 ft/min  
y0 = 1.628 ft



DATA SET:  
MW33AS0.DAT  
10/23/97

AQUIFER MODEL:  
Confined

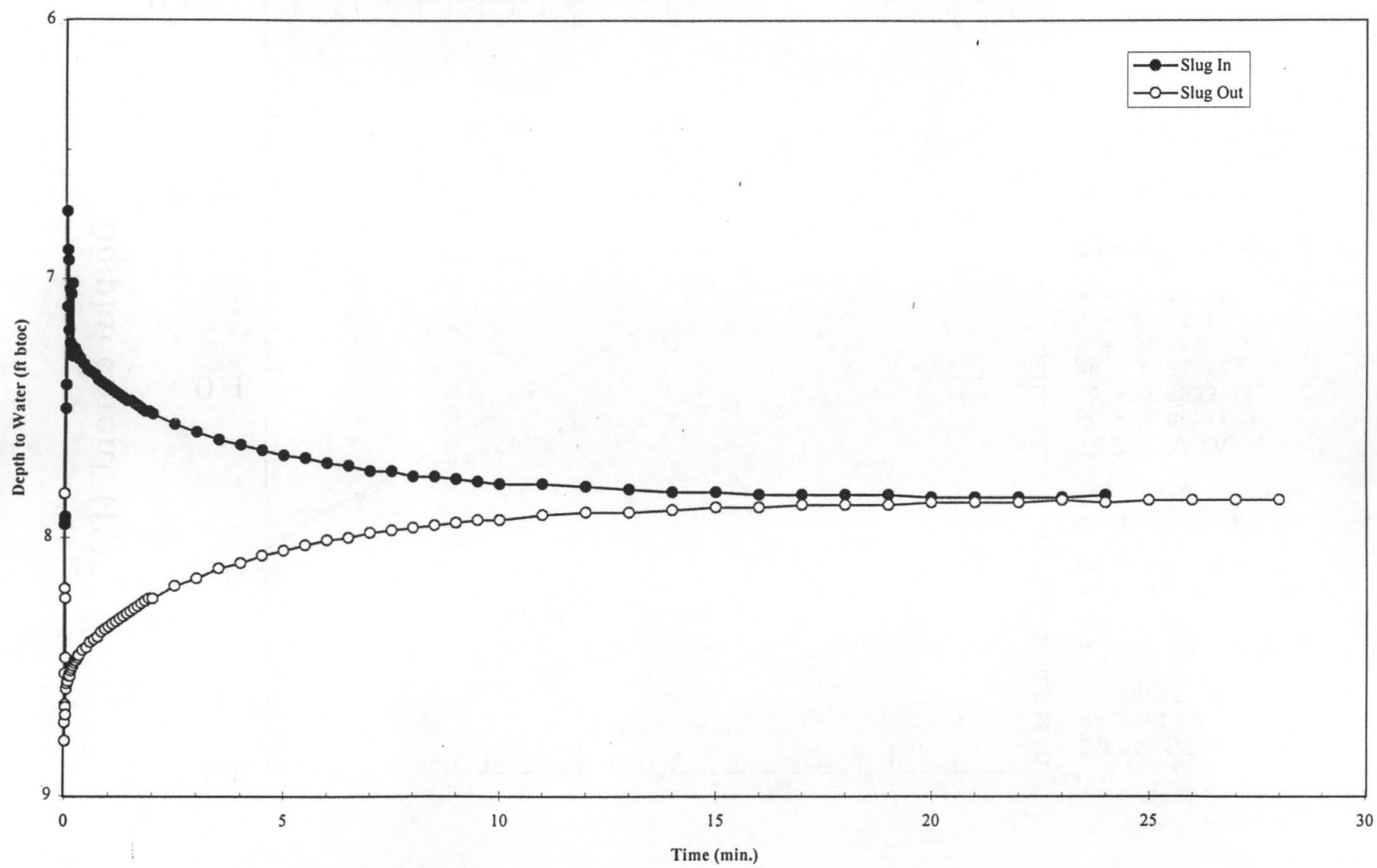
SOLUTION METHOD:  
Bouwer-Rice

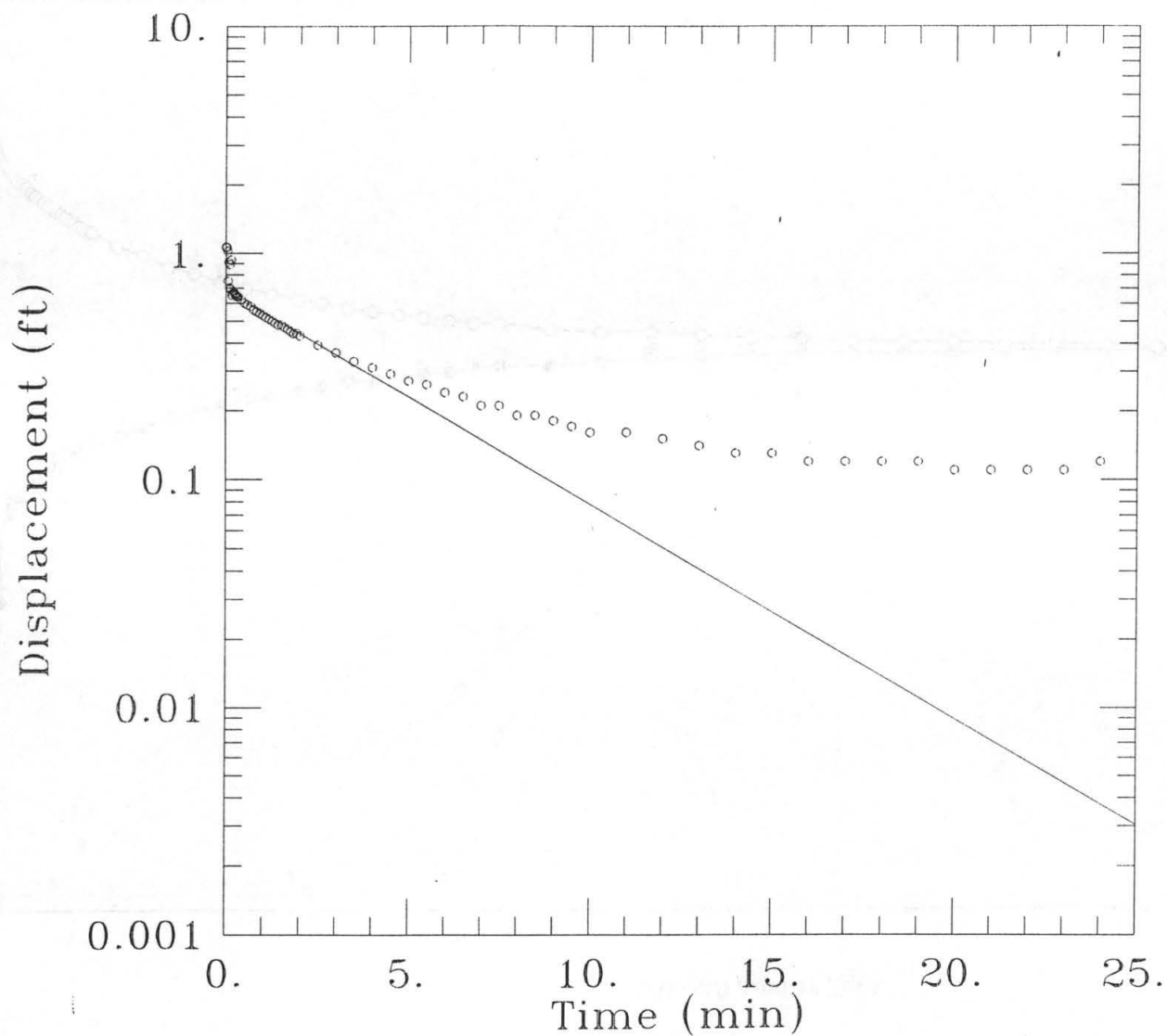
PROJECT DATA:  
test date: 8/23/97

TEST DATA:  
H0 = 2.09 ft  
rc = 0.0833 ft  
rw = 0.25 ft  
L = 10. ft  
b = 33.33 ft  
H = 33.33 ft

PARAMETER ESTIMATES:  
K = 0.0003716 ft/min  
y0 = 1.659 ft

# MW-33B Aquifer Tests





DATA SET:  
MW33BSI.DAT  
10/23/97

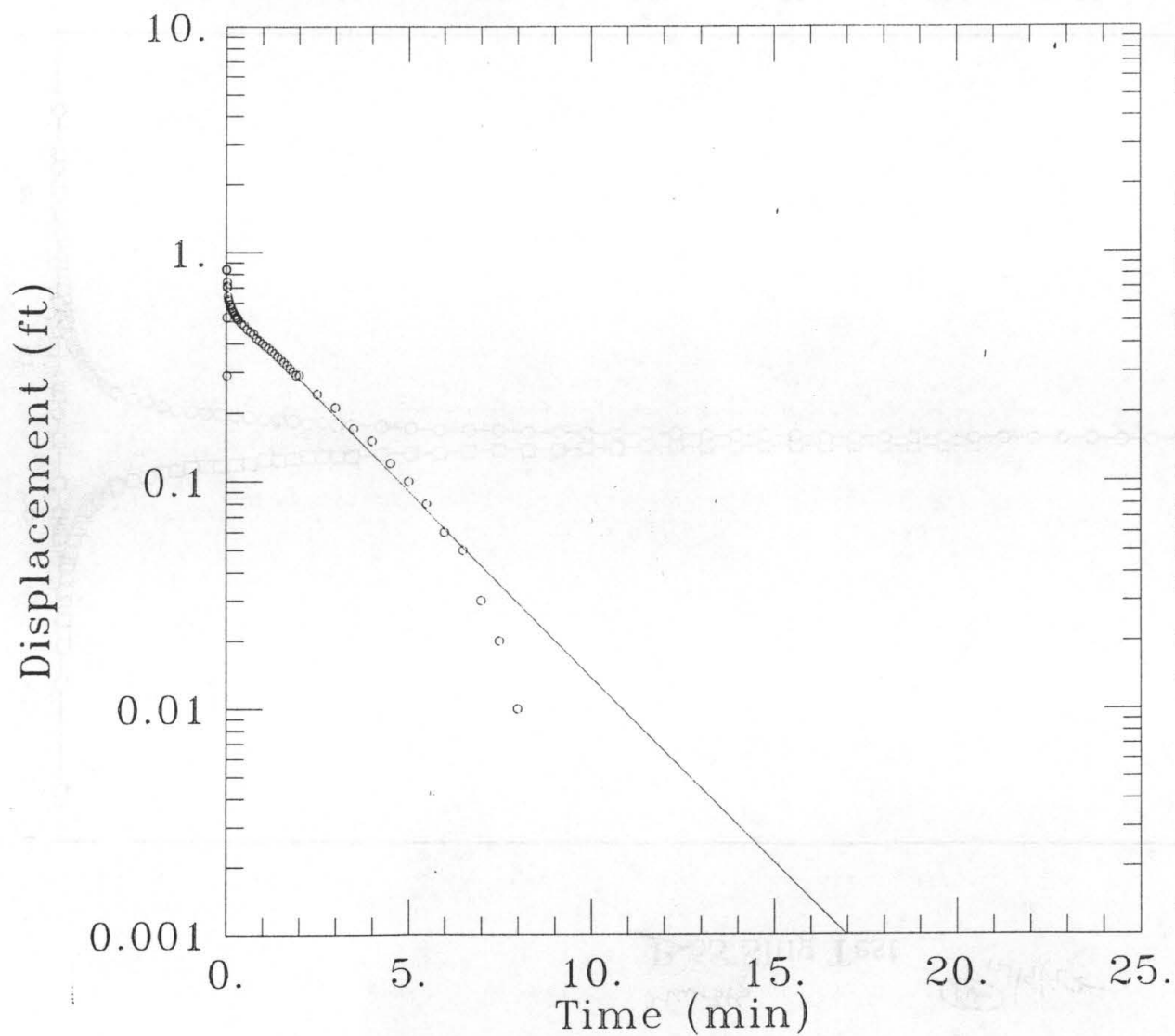
AQUIFER MODEL:  
Confined

SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/23/97

TEST DATA:  
H0 = 1.06 ft  
rc = 0.0833 ft  
rw = 0.25 ft  
L = 10. ft  
b = 33.33 ft  
H = 33.33 ft

PARAMETER ESTIMATES:  
K = 0.0002658 ft/min  
y0 = 0.6769 ft



DATA SET:  
MW33BS0.DAT  
10/23/97

AQUIFER MODEL:  
Confined

SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/23/97

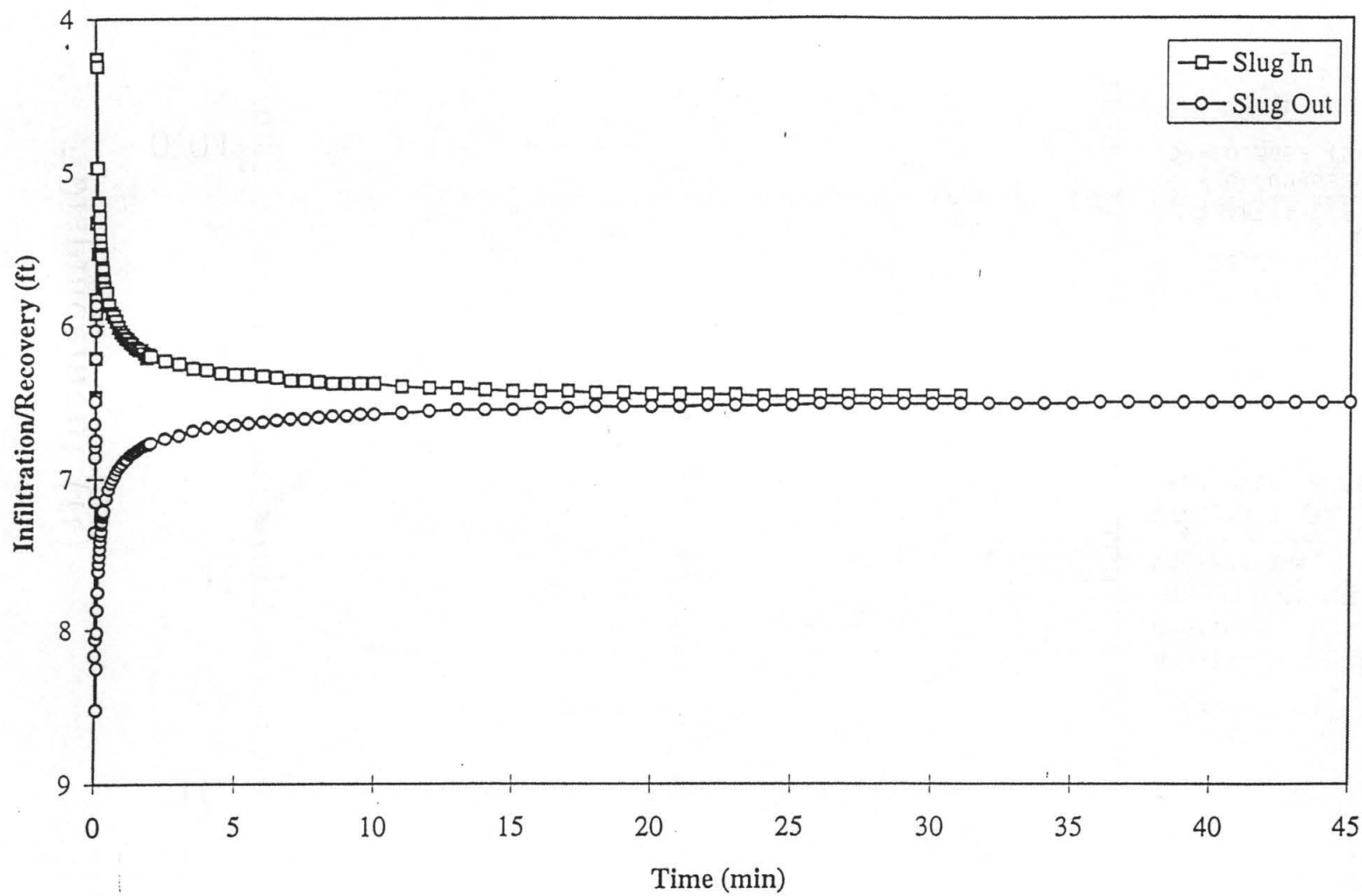
TEST DATA:  
H0 = 0.84 ft  
rc = 0.0833 ft  
rw = 0.25 ft  
L = 10. ft  
b = 33.33 ft  
H = 33.33 ft

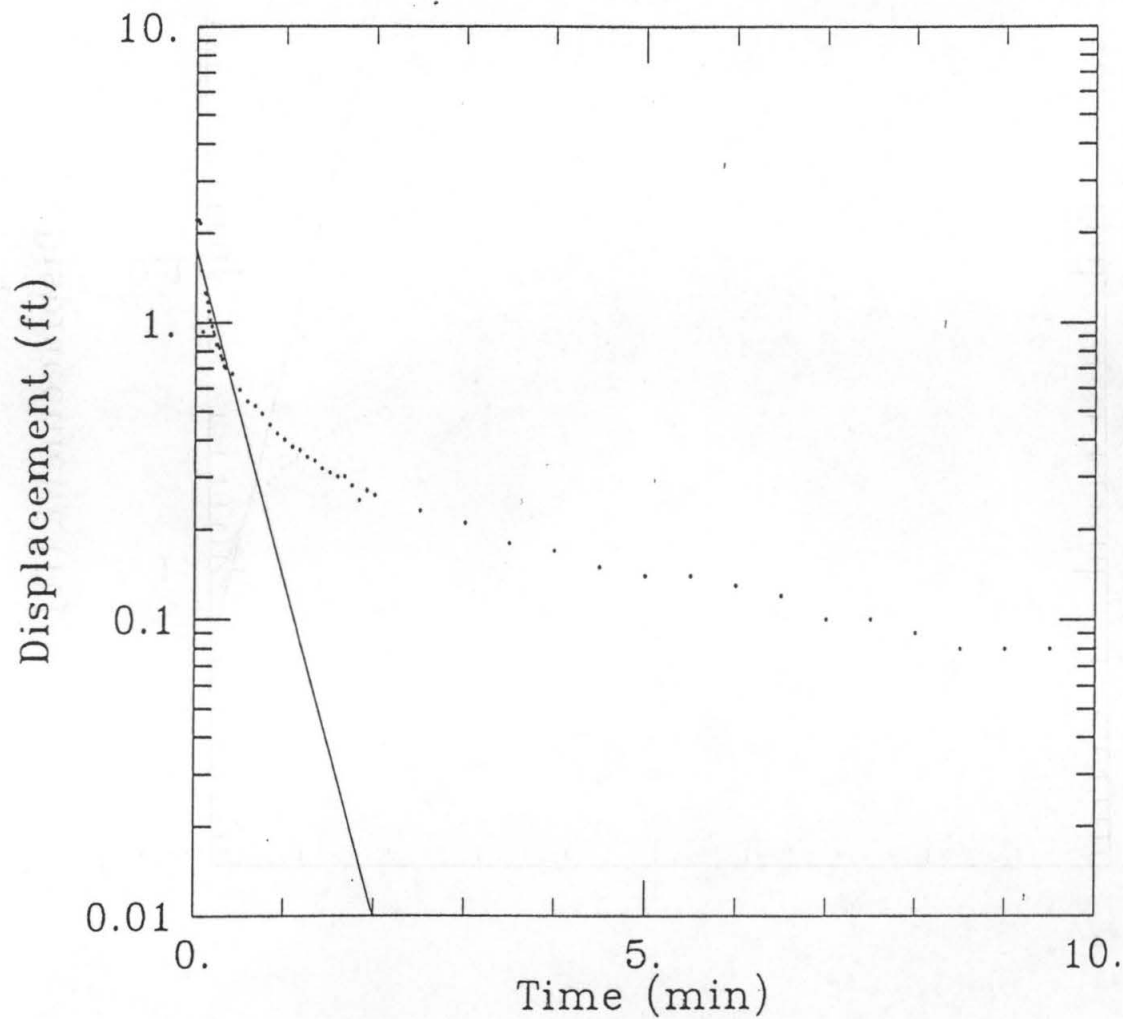
PARAMETER ESTIMATES:  
K = 0.0004632 ft/min  
y0 = 0.5962 ft

graph

MW-345  
P-6S Slug Test

(14)  
12/19/92





DATA SET:  
P06SSIA.DAT *mw-345*  
09/25/95

AQUIFER MODEL:  
Unconfined

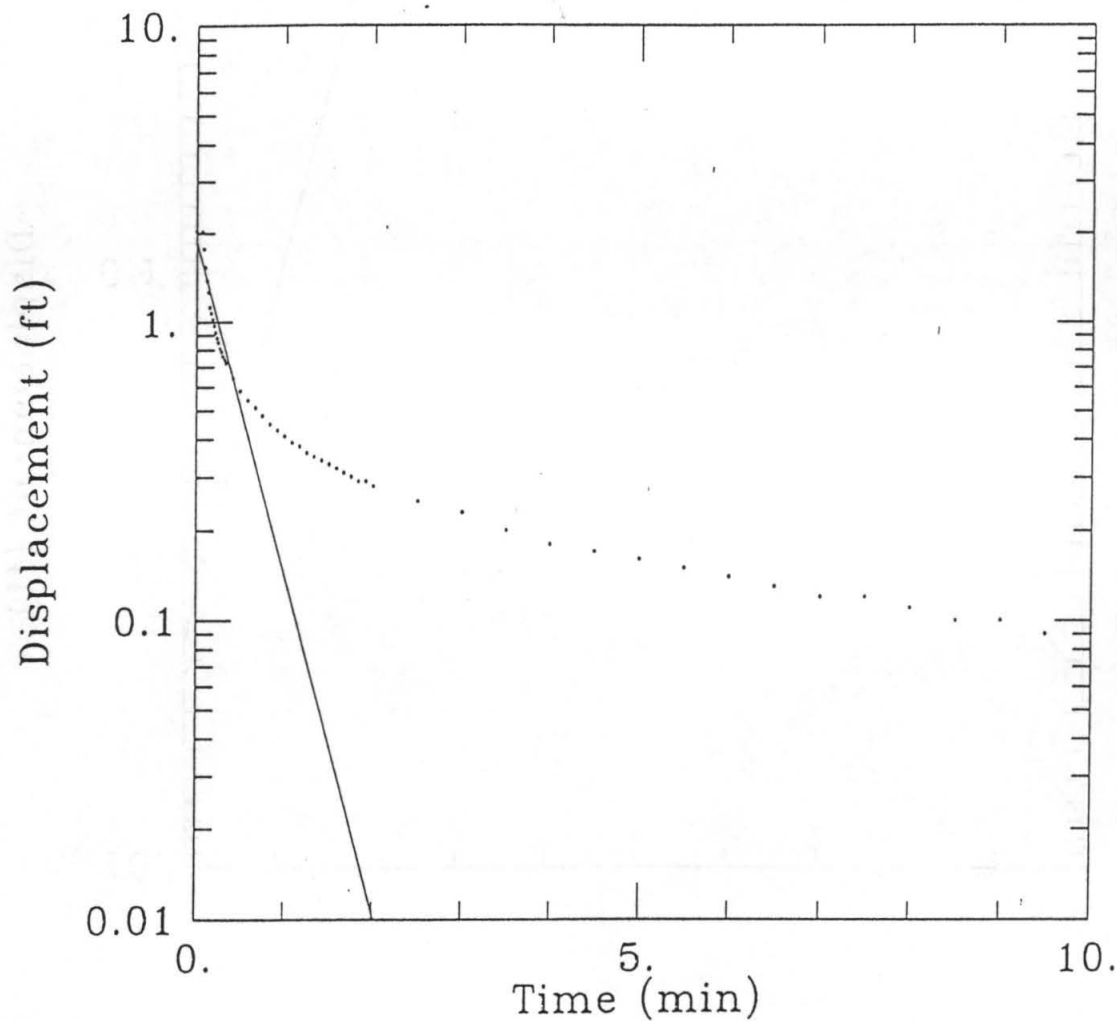
SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/10/95

TEST DATA:  
H0 = 2.2 ft  
rc = 0.0833 ft  
rw = 0.25 ft  
L = 10. ft  
b = 30. ft  
H = 30. ft

PARAMETER ESTIMATES:  
K = 0.00314 ft/min  
y0 = 1.779 ft





DATA SET:  
P06SS0A.DAT *rw-345*  
09/25/95

AQUIFER MODEL:  
Unconfined

SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/10/95

TEST DATA:

H0 = 2.03 ft  
rc = 0.0833 ft  
rw = 0.25 ft  
L = 10. ft  
b = 30. ft  
H = 30. ft

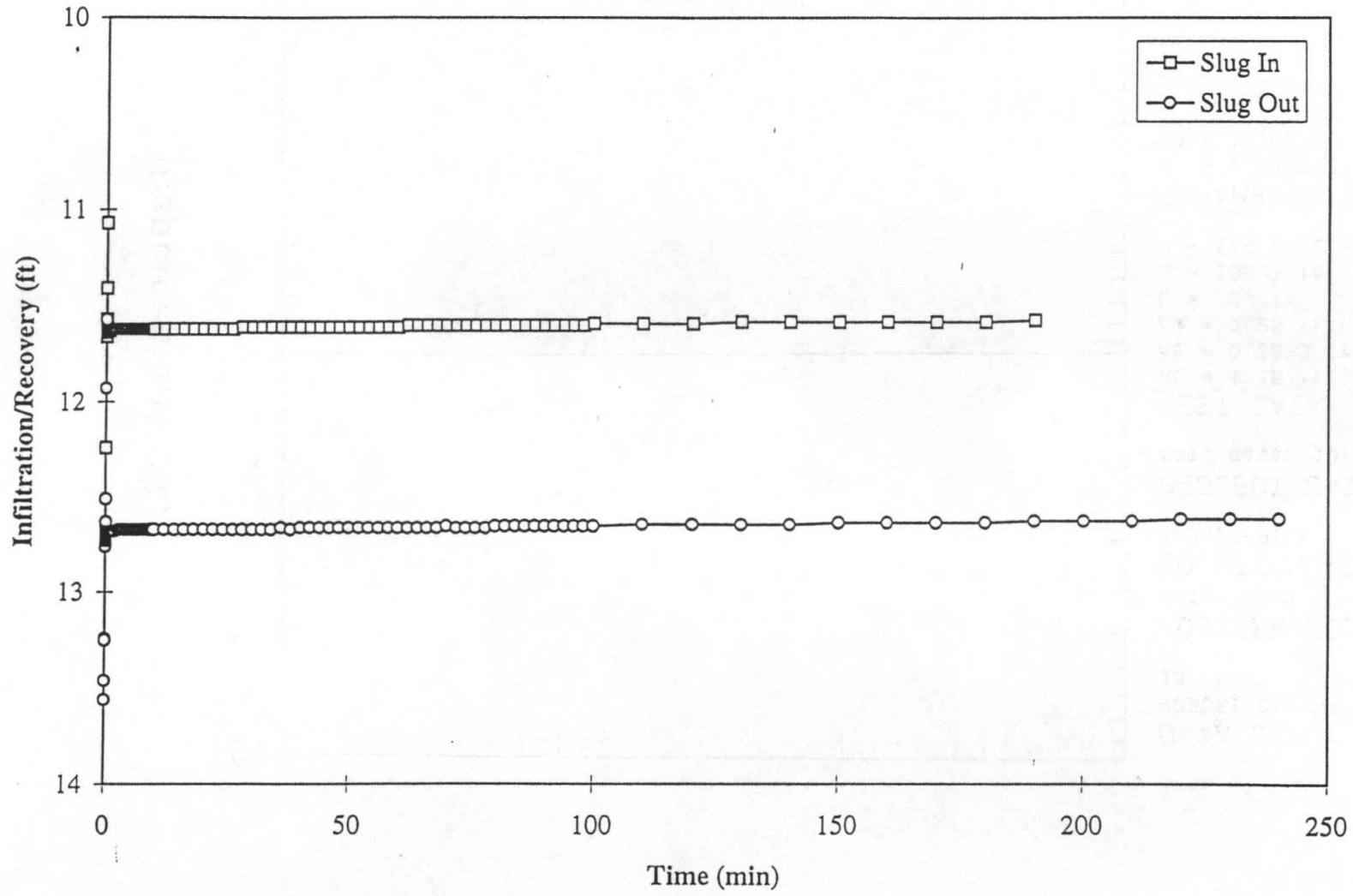
PARAMETER ESTIMATES:

K = 0.003127 ft/min  
y0 = 1.864 ft

MW-34D  
P-6D Slug Test

JP 12/19/97

000371  
JP 12/19/97

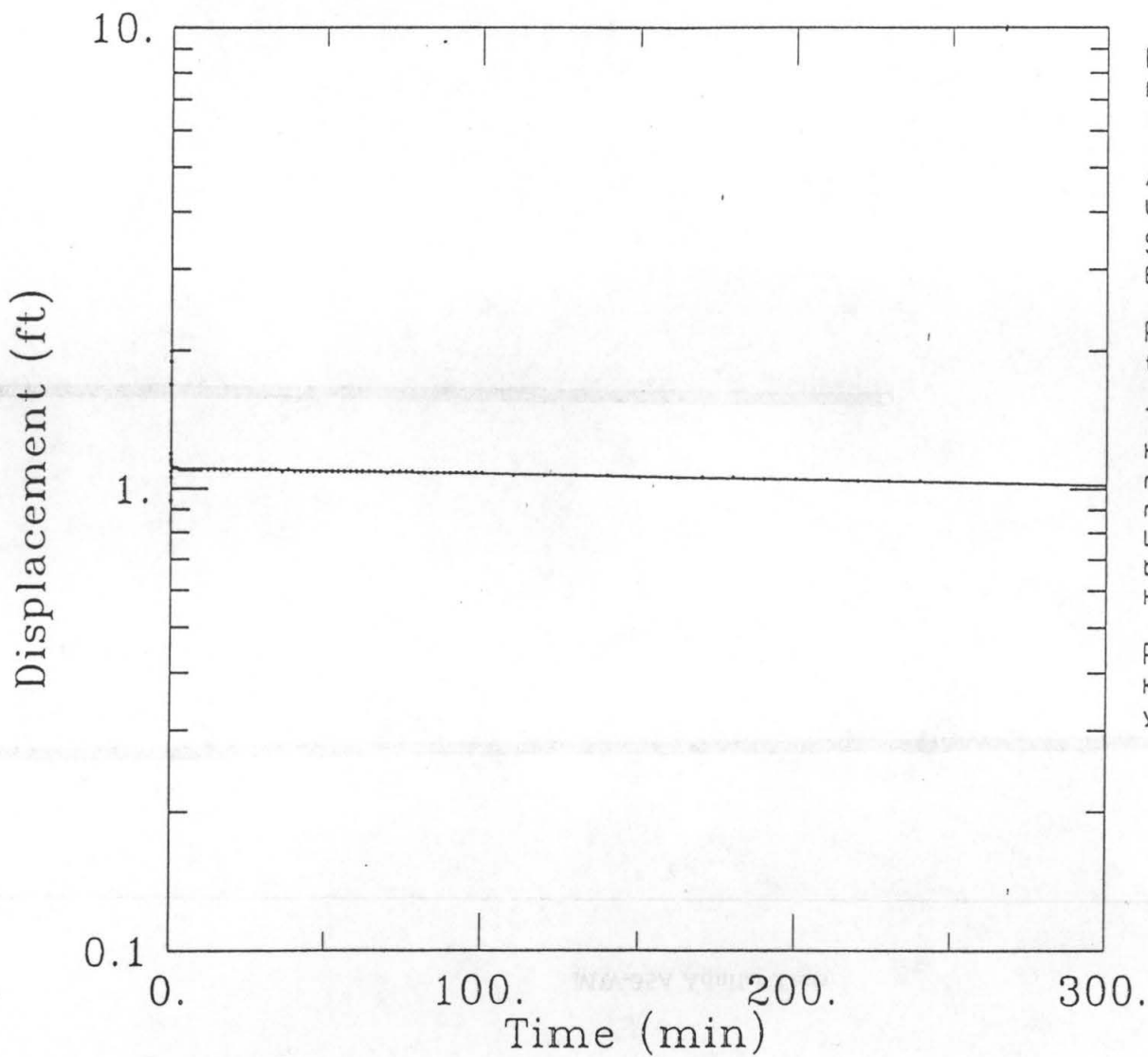


27000  
2/9/92

```

PARAMETER ESTIMATES:
K  = 1.905E-07 ft/min
y0 = 1.102 ft

```



DATA SET:

P06DSO.DAT rw-340  
10/18/95

AQUIFER MODEL:

Unconfined

SOLUTION METHOD:

Bouwer-Rice

PROJECT DATA:

test date: 10/14/95

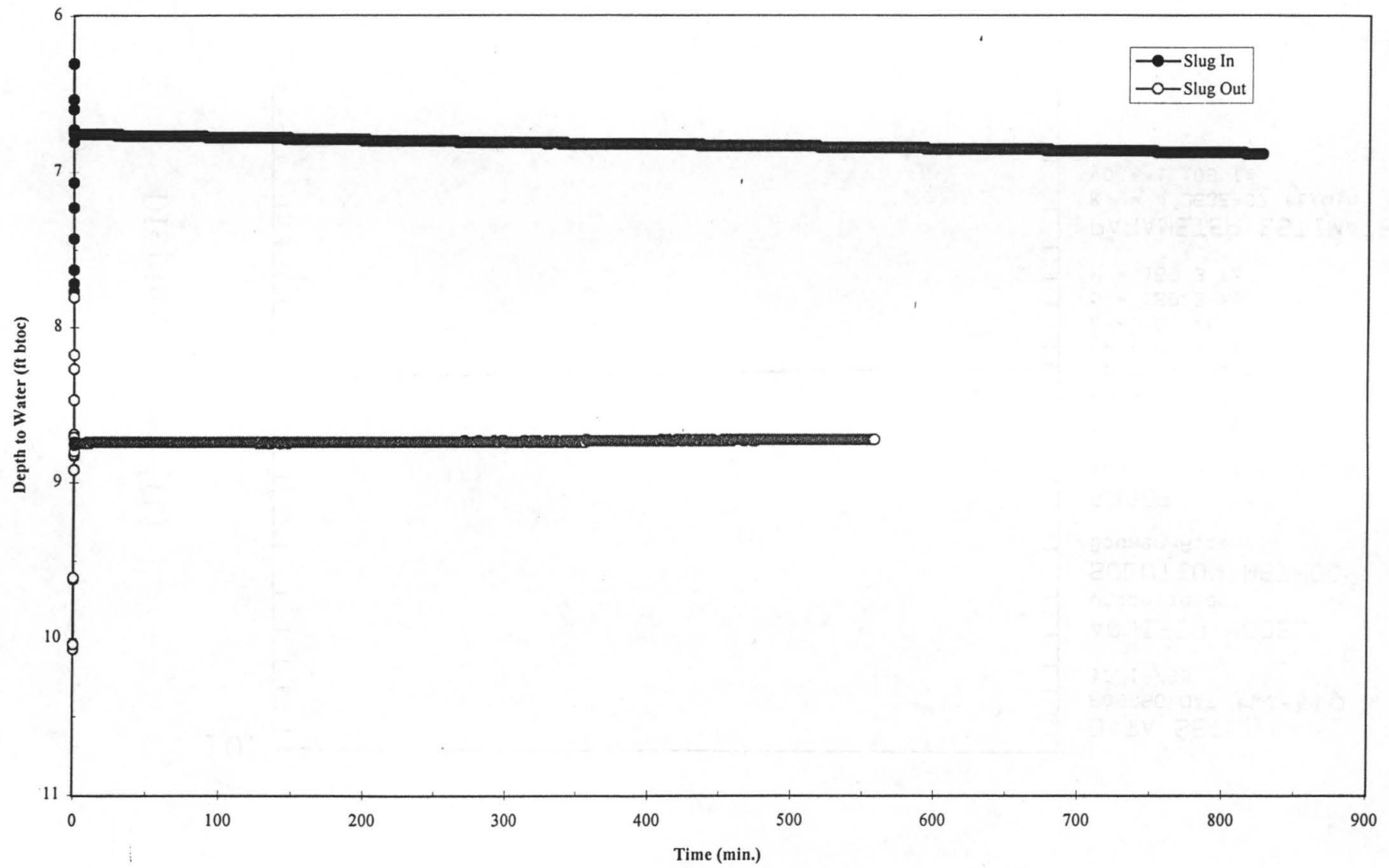
TEST DATA:

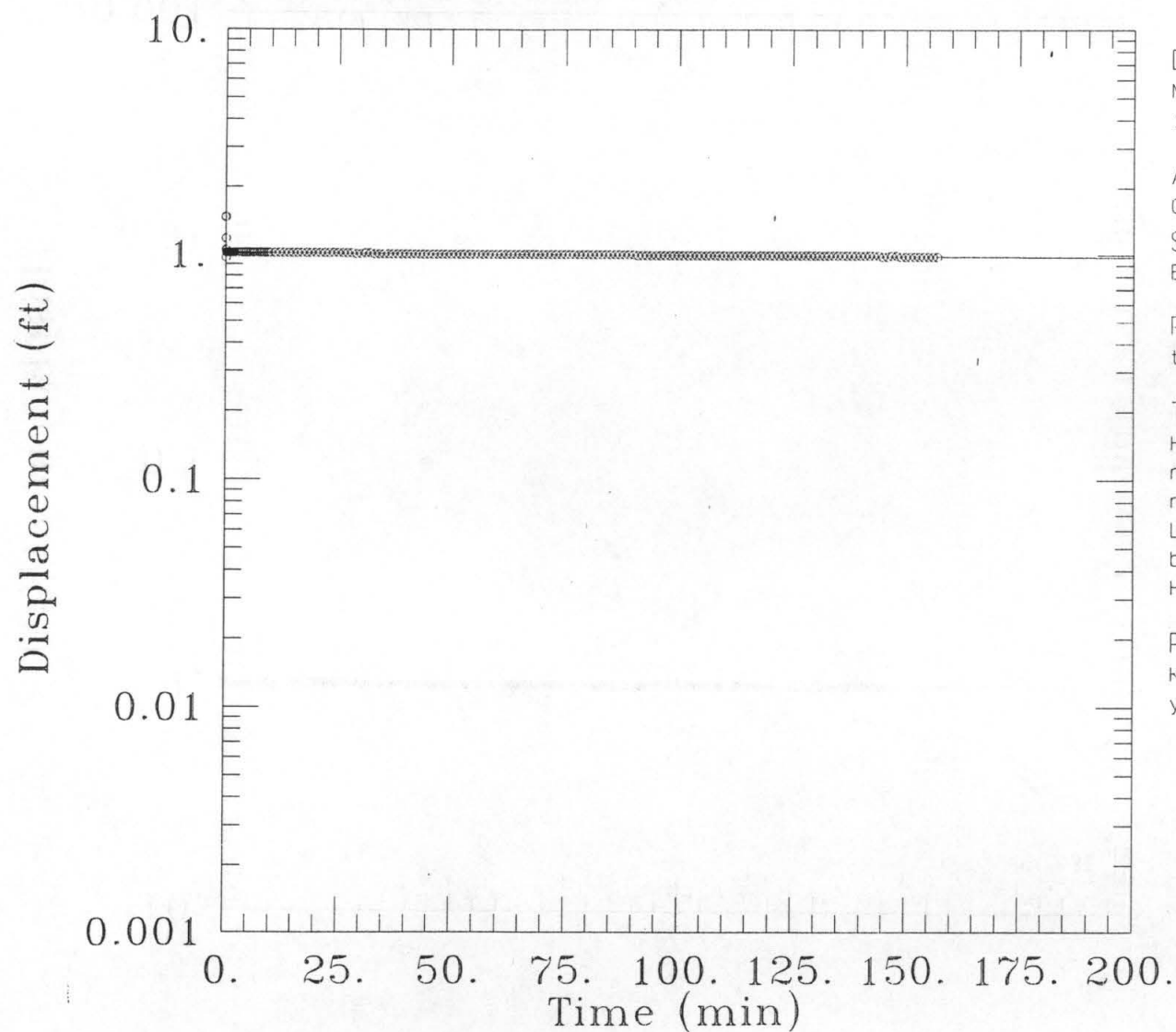
H0 = 1.19 ft  
rc = 0.0833 ft  
rw = 0.25 ft  
L = 10. ft  
b = 169.3 ft  
H = 169.3 ft

PARAMETER ESTIMATES:

K = 4.363E-07 ft/min  
y0 = 1.109 ft

# MW-35A Aquifer Tests





DATA SET:  
MW35SI.DAT  
10/23/97

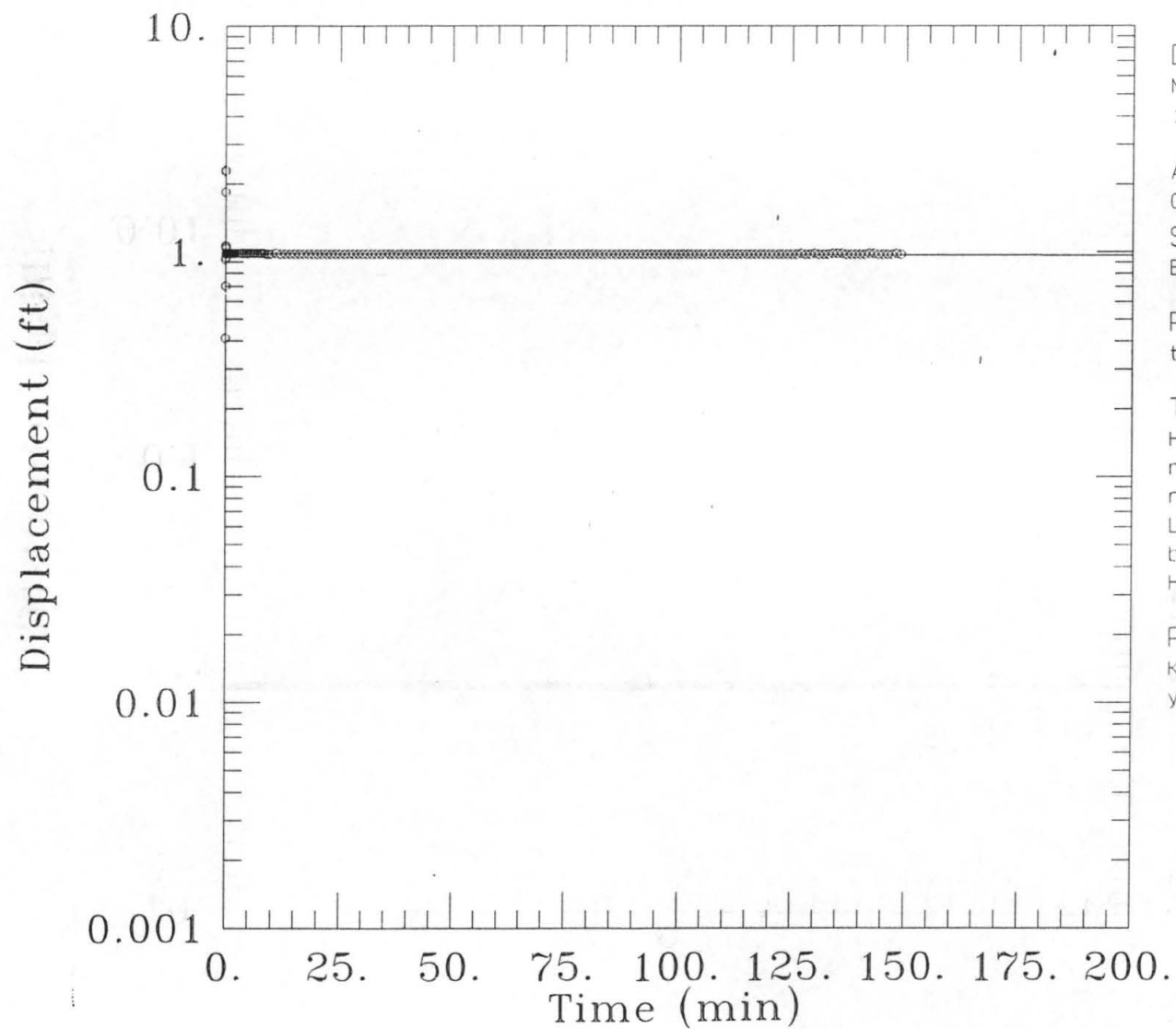
AQUIFER MODEL:  
Confined

SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 9/03/97

TEST DATA:  
H0 = 1.46 ft  
rc = 0.0833 ft  
rw = 0.25 ft  
L = 10. ft  
b = 24.58 ft  
H = 24.58 ft

PARAMETER ESTIMATES:  
K = 2.039E-07 ft/min  
y0 = 1.011 ft



DATA SET:  
MW35S0.DAT  
10/24/97

AQUIFER MODEL:  
Confined

SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 9/04/97

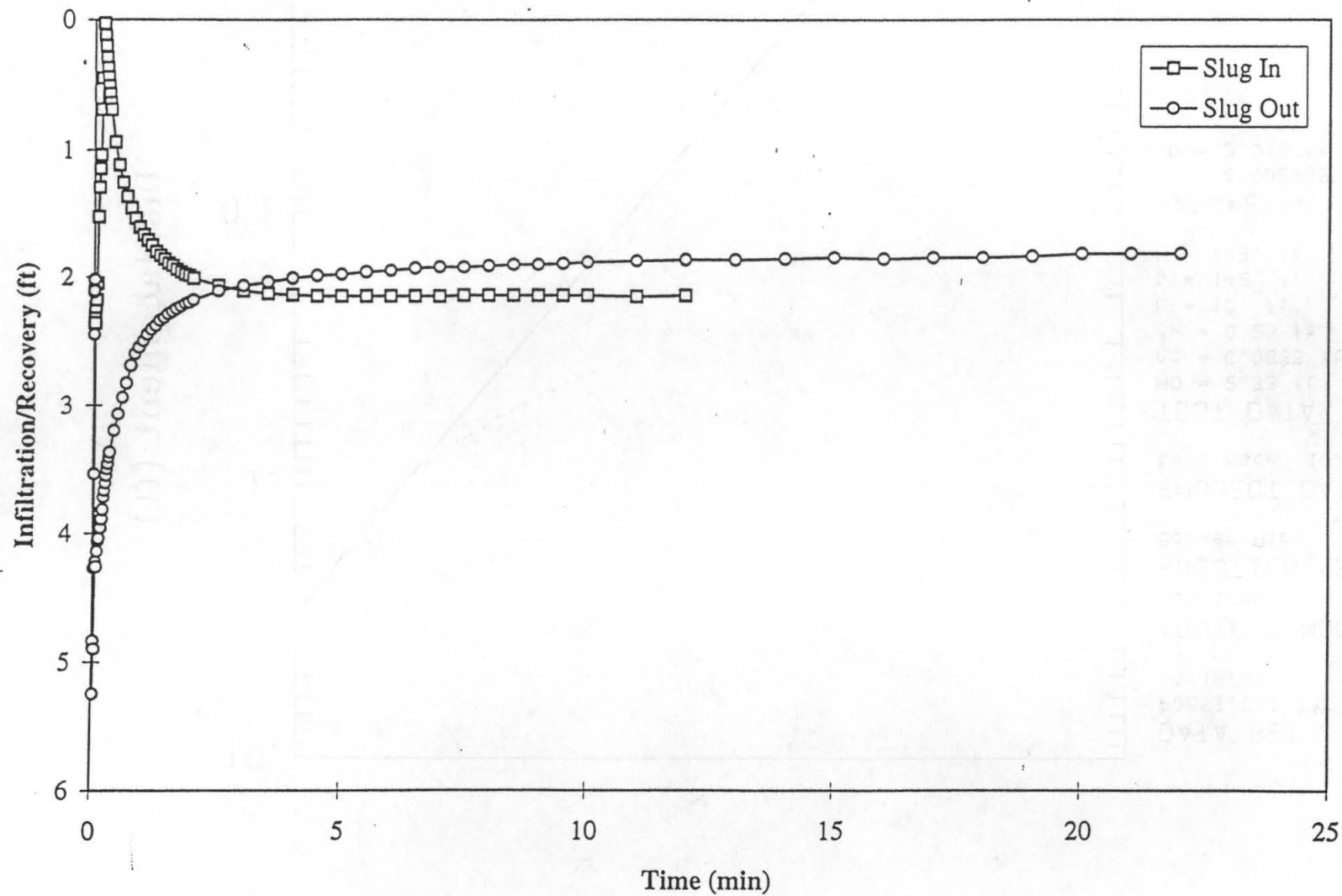
TEST DATA:  
H0 = 2.3 ft  
rc = 0.0833 ft  
rw = 0.25 ft  
L = 10. ft  
b = 24.58 ft  
H = 24.58 ft

PARAMETER ESTIMATES:  
K = 7.921E-08 ft/min  
y0 = 0.9776 ft

MW-36

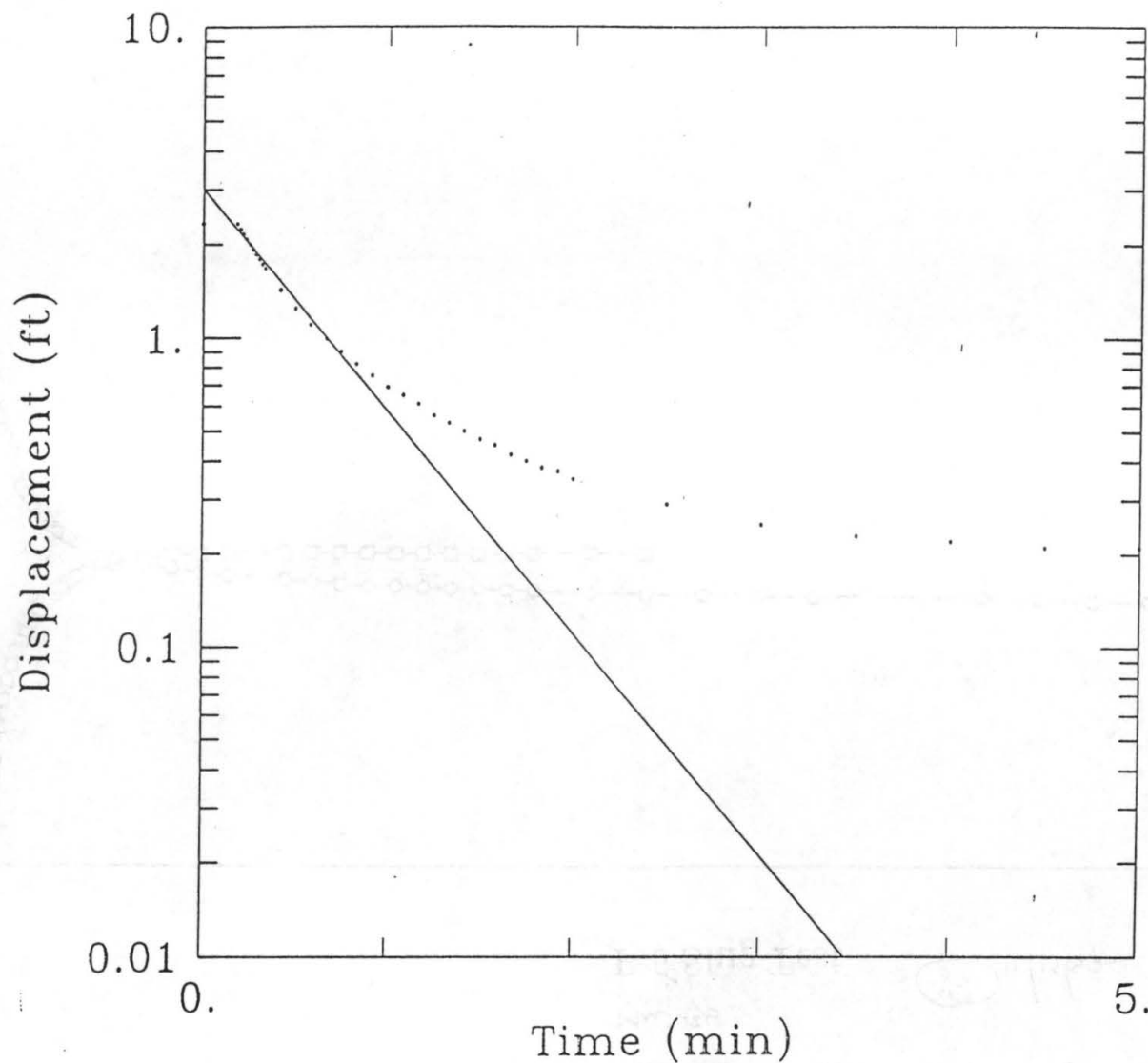
P-5 Slug Test

54 12/15/97



000365  
54 12/15/97





DATA SET:  
P05SI.DAT *rw-36*  
10/18/95

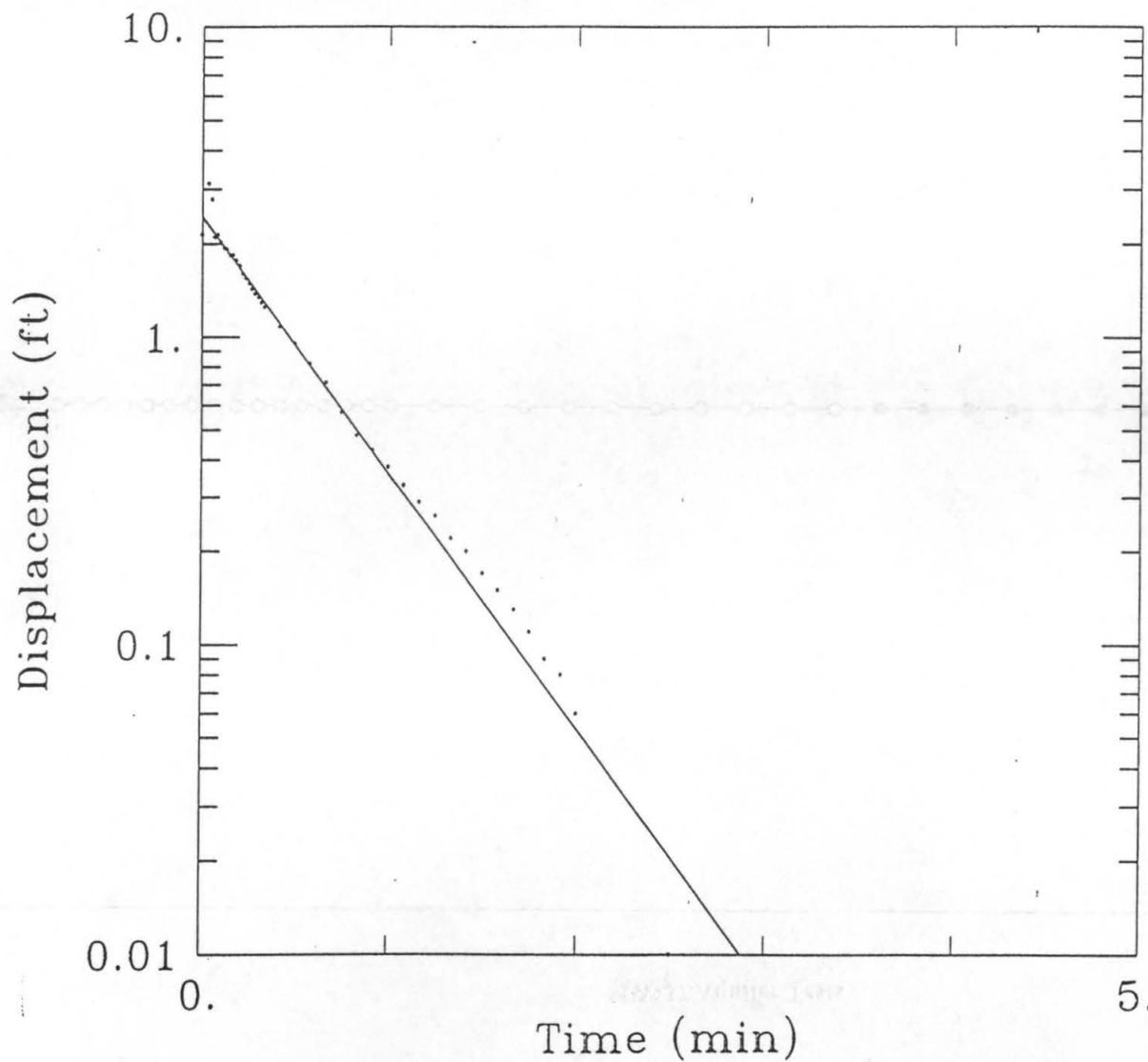
AQUIFER MODEL:  
Confined

SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 10/10/95

TEST DATA:  
H0 = 2.33 ft  
rc = 0.0833 ft  
rw = 0.25 ft  
L = 10. ft  
b = 142. ft  
H = 142. ft

PARAMETER ESTIMATES:  
K = 0.002483 ft/min  
y0 = 3.013 ft



DATA SET:

P0550.DAT *Mw-36*  
10/18/95

AQUIFER MODEL:

Confined

SOLUTION METHOD:

Bouwer-Rice

PROJECT DATA:

test date: 10/10/95

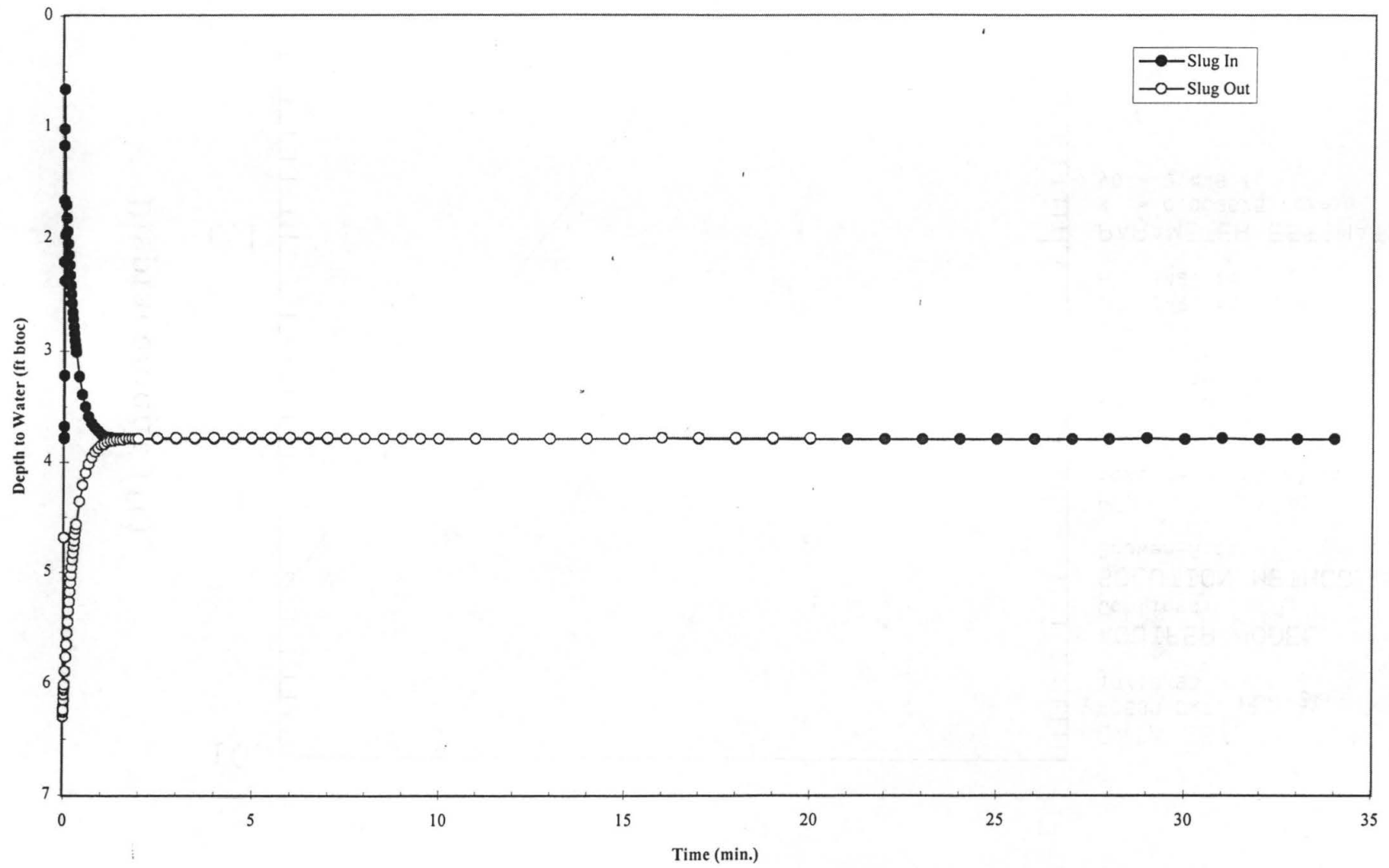
TEST DATA:

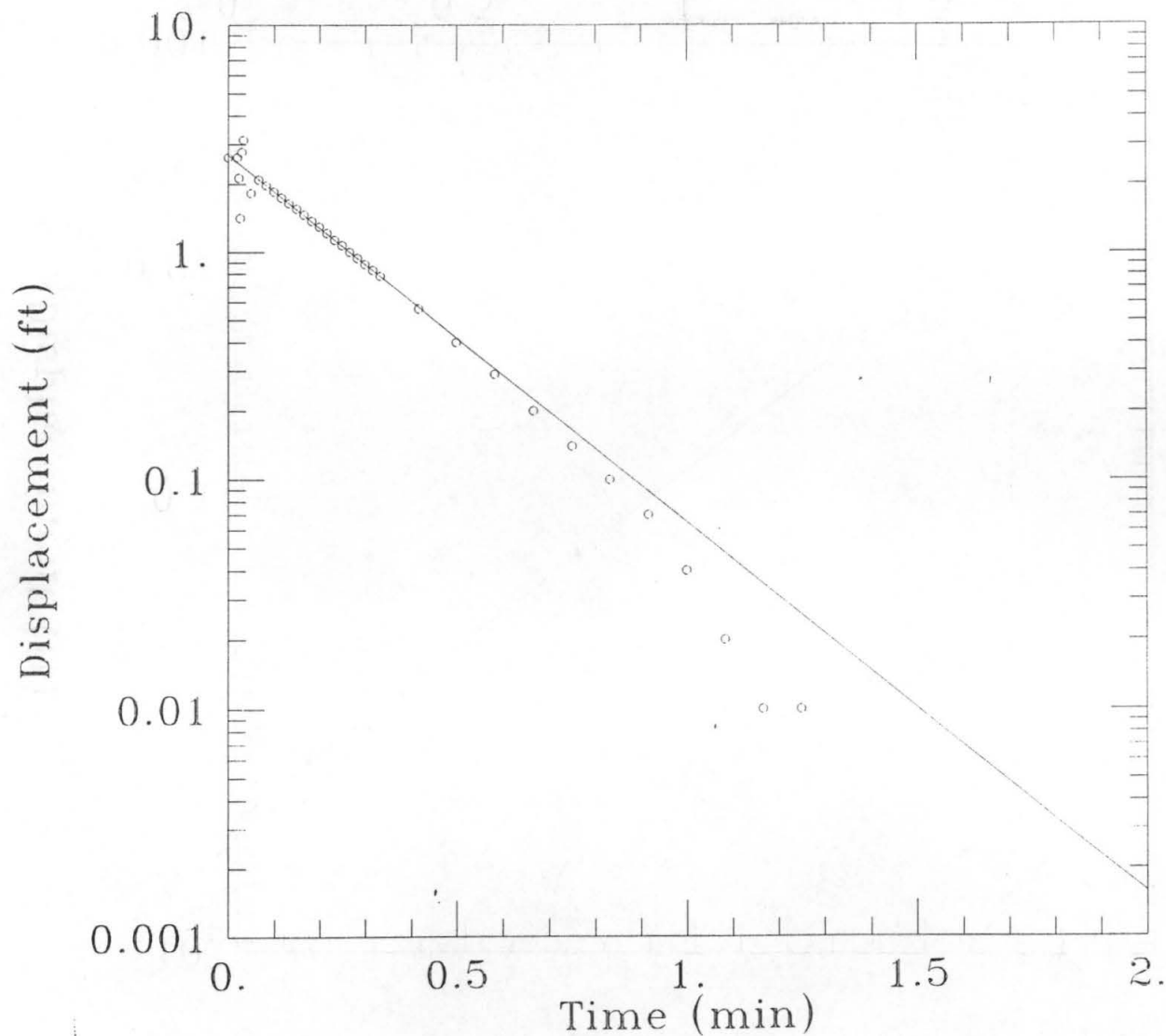
H0 = 2.14 ft  
rc = 0.0833 ft  
rw = 0.25 ft  
L = 10. ft  
b = 142. ft  
H = 142. ft

PARAMETER ESTIMATES:

K = 0.002875 ft/min  
y0 = 2.448 ft

# MW-37 Aquifer Tests





DATA SET:  
MW37SI.DAT  
10/24/97

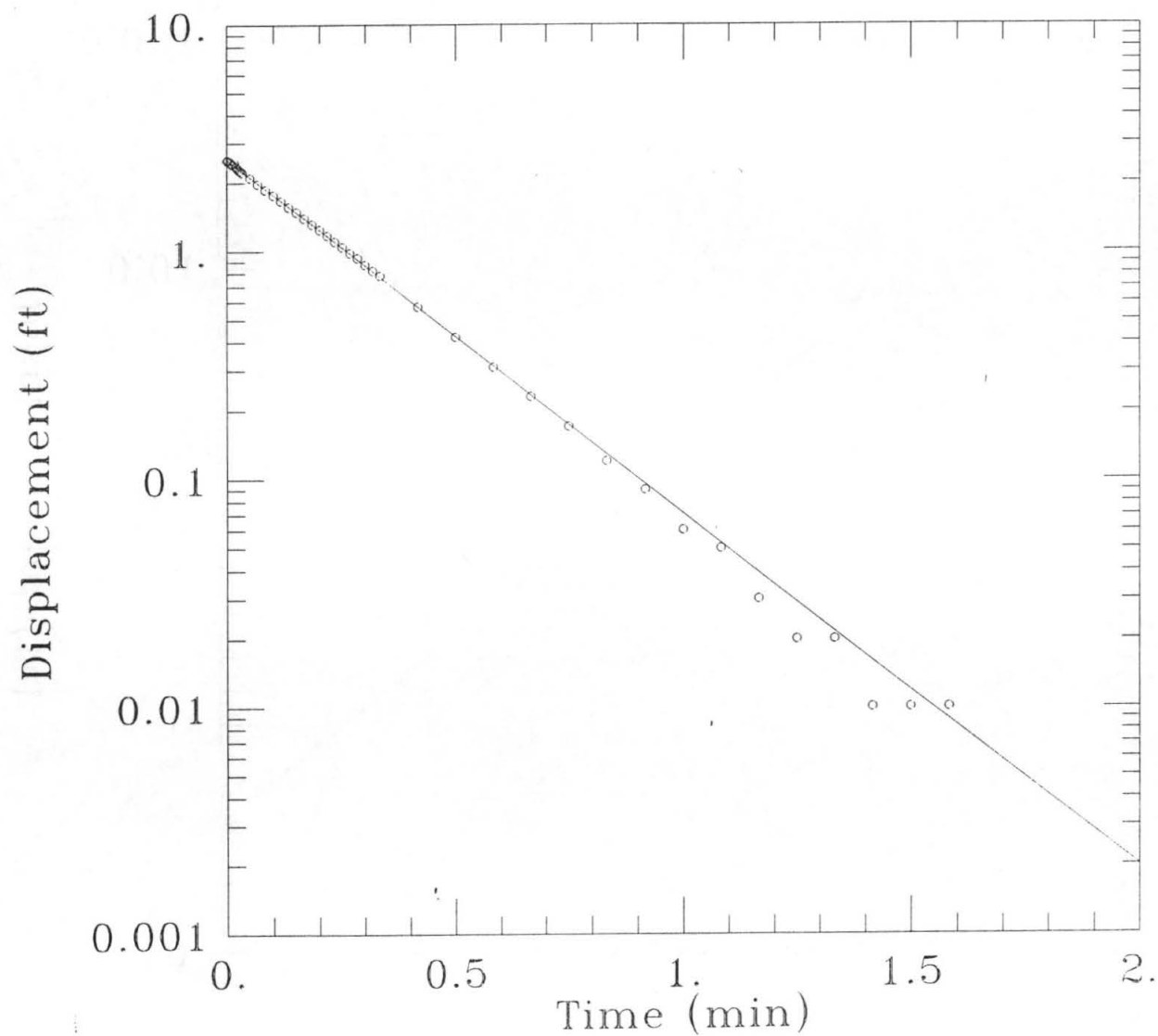
AQUIFER MODEL:  
Confined

SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/16/97

TEST DATA:  
H0 = 2.62 ft  
rc = 0.0833 ft  
rw = 0.25 ft  
L = 10. ft  
b = 26.41 ft  
H = 26.41 ft

PARAMETER ESTIMATES:  
K = 0.0044 ft/min  
y0 = 2.693 ft



DATA SET:  
MW37S0.DAT  
10/24/97

AQUIFER MODEL:  
Confined

SOLUTION METHOD:  
Bouwer-Rice

PROJECT DATA:  
test date: 8/16/97

TEST DATA:  
H0 = 2.51 ft  
rc = 0.0833 ft  
rw = 0.25 ft  
L = 10. ft  
b = 26.41 ft  
H = 26.41 ft

PARAMETER ESTIMATES:  
K = 0.004223 ft/min  
y0 = 2.525 ft

— **1999** — **2000**

## Version 2.0

Developed by Glenn M. Duffield  
(c) 1993, 1994 Geraghty & Miller, Inc.

10/23/97

14:21:57

## TEST DESCRIPTION

```
Data set..... MW21SI.DAT
Output file..... MW21SI.OUT
Data set title.... MW-21 SLUG IN
Company..... GERAGHTY & MILLER, INC.
Project..... TF0320.015
Client..... SLOSS INDUSTRIES
Location..... BIRMINGHAM, ALABAMA
Test date..... 8/17/97
```

## Units of Measurement

Length..... ft  
Time..... min

### Test Well Data

Initial displacement in well.....	1.77
Radius of well casing.....	0.0833
Radius of wellbore.....	0.25
Aquifer saturated thickness.....	26.58
Well screen length.....	10
Static height of water in well...	26.58

Gravel pack porosity..... 0  
 Effective well casing radius..... 0.0833  
 Effective wellbore radius..... 0.25  
 Log (Re/Rw) ..... 3.411  
 Constants A, B and C..... 0.000 , 0.000, 2.297  
 No. of observations..... 118

=====

ANALYTICAL METHOD

Bouwer-Rice (Confined Aquifer Slug Test)

=====

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate	Std. Error
K =	3.8727E-005 +/-	5.0540E-007 ft/min
y0 =	7.8414E-001 +/-	4.0214E-003 ft

ANALYSIS OF MODEL RESIDUALS

residual = observed - calculated  
 weighted residual = residual \* weight

Weighted Residual Statistics:

Number of residuals..... 37  
 Number of estimated parameters.... 2  
 Degrees of freedom..... 35  
 Residual mean..... 0.0002284  
 Residual standard deviation..... 0.009762

Residual variance..... 9.531E-005

Model Residuals:

Time	Observed	Calculated	Residual	Weight
2	0.76	0.73447	0.025534	1
2.5	0.74	0.72255	0.017452	1
3	0.72	0.71082	0.0091774	1
3.5	0.7	0.69929	0.0007123	1
4	0.69	0.68794	0.00206	1
4.5	0.68	0.67678	0.0032236	1
5	0.66	0.66579	-0.0057939	1
5.5	0.66	0.65499	0.0050103	1
6	0.64	0.64436	-0.0043608	1
6.5	0.63	0.6339	-0.0039044	1
7	0.62	0.62362	-0.0036177	1
7.5	0.61	0.6135	-0.0034979	1
8	0.6	0.60354	-0.0035423	1
8.5	0.58	0.59375	-0.013748	1
9	0.57	0.58411	-0.014113	1
9.5	0.57	0.57463	-0.0046344	1
10	0.56	0.56531	-0.0053095	1
11	0.54	0.54711	-0.0071112	1
12	0.52	0.5295	-0.0094987	1
13	0.5	0.51245	-0.012453	1
14	0.49	0.49596	-0.0059564	1
15	0.47	0.47999	-0.0099907	1
16	0.46	0.46454	-0.0045389	1
17	0.45	0.44958	0.00041546	1
18	0.43	0.43511	-0.0051116	1
19	0.41	0.4211	-0.011105	1
20	0.41	0.40755	0.0024515	1



## RESULTS FROM VISUAL CURVE MATCHING

```

      Estimate
K   =  3.8727E-005  ft/min
y0  =  7.8414E-001  ft

```

[illegible]

\_\_\_\_\_

## Version 2.0

Developed by Glenn M. Duffield  
(c) 1993, 1994 Geraghty & Miller, Inc.

10/23/97

14:23:57

## TEST DESCRIPTION

```
Data set..... MW21SO.DAT
Output file..... MW21SO.OUT
Data set title.... MW-21 SLUG OUT
Company..... GERAGHTY & MILLER, INC.
Project..... TF0320.015
Client..... SLOSS INDUSTRIES
Location..... BIRMINGHAM, ALABAMA
Test date..... 8/17/97
```

## Units of Measurement

Length..... ft  
Time..... min

### Test Well Data

```
Initial displacement in well..... 1.1
Radius of well casing..... 0.0833
Radius of wellbore.....,..... 0.25
Aquifer saturated thickness..... 26.58
Well screen length..... 10
Static height of water in well... 26.58
```

Gravel pack porosity..... 0  
 Effective well casing radius..... 0.0833  
 Effective wellbore radius..... 0.25  
 Log(Re/Rw)..... 3.411  
 Constants A, B and C..... 0.000 , 0.000, 2.297  
 No. of observations..... 122

=====

ANALYTICAL METHOD

Bouwer-Rice (Confined Aquifer Slug Test)

=====

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate	Std. Error
K =	5.3492E-005 +/-	6.2581E-007 ft/min
y0 =	7.4301E-001 +/-	3.8194E-003 ft

ANALYSIS OF MODEL RESIDUALS

residual = observed - calculated  
 weighted residual = residual \* weight

Weighted Residual Statistics:

Number of residuals..... 32  
 Number of estimated parameters.... 2  
 Degrees of freedom..... 30  
 Residual mean..... 0.0001483  
 Residual standard deviation..... 0.007822

Residual variance..... 6.119E-005

Model Residuals:

Time	Observed	Calculated	Residual	Weight
2	0.69	0.67879	0.011211	1
2.5	0.67	0.66362	0.0063782	1
3	0.65	0.64879	0.0012069	1
3.5	0.64	0.6343	0.0057041	1
4	0.62	0.62012	-0.00012253	1
4.5	0.61	0.60627	0.0037341	1
5	0.59	0.59272	-0.0027189	1
5.5	0.58	0.57947	0.00052542	1
6	0.56	0.56653	-0.0065262	1
6.5	0.54	0.55387	-0.013867	1
7	0.54	0.54149	-0.001491	1
7.5	0.53	0.52939	0.00060857	1
8	0.52	0.51756	0.0024378	1
8.5	0.51	0.506	0.0040027	1
9	0.5	0.49469	0.0053093	1
9.5	0.47	0.48364	-0.013637	1
10	0.46	0.47283	-0.01283	1
11	0.44	0.45194	-0.011935	1
12	0.43	0.43196	-0.001964	1
13	0.41	0.41288	-0.0028752	1
14	0.39	0.39463	-0.00463	1
15	0.38	0.37719	0.002809	1
16	0.36	0.36052	-0.00052266	1
17	0.35	0.34459	0.0054091	1
18	0.35	0.32936	0.020637	1
19	0.31	0.31481	-0.0048084	1
20	0.3	0.3009	-0.00089682	1

## RESULTS FROM VISUAL CURVE MATCHING

```

      Estimate
K   =  5.3492E-005  ft/min
y0  =  7.4301E-001  ft

```

[illegible]

SE1000B  
Environmental Logger  
15-Aug

20:03

P31 RW-22 (S) 12/17/92

Unit# 331 Test# 4

INPUT 1:00 Level (F) TOC

Reference 94.2  
Scale factor 9.97  
Offset 0.03

Step# 0 15-Aug 13:38  
Step# 1 15-Aug 15:08

P31 RW-22

Time	Slug In	Slug Out
0	93.68	93.64
0.0033	93.67	93.64
0.0066	93.68	93.65
0.0099	93.68	93.68
0.0133	93.68	95.4
0.0166	93.68	94.73
0.02	93.68	94.22
0.0233	93.32	94.89
0.0266	92.85	95.48
0.03	92.78	95.76
0.0333	92.51	95.92
0.05	91.62	95.7
0.0666	91.56	95.58
0.0833	91.37	95.46
0.1	91.77	95.36
0.1166	92.78	95.26
0.1333	91.96	95.17
0.15	92.08	95.07
0.1666	92.18	95
0.1833	92.27	94.91
0.2	92.36	94.84
0.2166	92.45	94.77
0.2333	92.53	94.7
0.25	92.61	94.63
0.2666	92.7	94.57
0.2833	92.76	94.51
0.3	92.83	94.45
0.3166	92.9	94.4
0.3333	92.97	94.35
0.4167	93.33	94.14
0.5	93.56	93.99
0.5833	93.65	93.87
0.6667	93.68	93.79
0.75	93.68	93.74
0.8333	93.68	93.7
0.9167	93.68	93.68
1	93.68	93.67
1.0833	93.68	93.65
1.1667	93.68	93.65
1.25	93.68	93.65

P31 RW-22

Time	Slug In	Slug Out
1.3333	93.68	93.64
1.4166	93.68	93.64
1.5	93.68	93.64
1.5833	93.68	93.64
1.6667	93.68	93.64
1.75	93.68	93.64
1.8333	93.68	93.64
1.9167	93.68	93.64
2	93.67	93.64
2.5	93.68	93.64
3	93.68	93.64
3.5	93.68	93.64
4	93.68	93.64
4.5	93.68	93.64
5	93.68	93.64
5.5	93.68	93.64
6	93.68	93.64
6.5	93.68	93.64
7	93.68	93.64
7.5	93.67	93.64
8	93.68	93.64
8.5	93.68	93.64
9	93.68	93.64
9.5	93.68	93.64
10	93.68	93.64
11	93.68	93.64
12	93.68	93.64
13	93.68	93.64
14	93.68	93.64
15	93.68	93.64
16	93.67	93.64
17	93.67	93.64
18	93.67	93.64
19	93.67	93.63
20	93.67	93.63
21	93.67	93.64
22	93.67	93.63
23	93.67	93.63
24	93.67	93.63
25	93.67	93.63

P31 RW-22

Time	Slug In	Slug Out
26	93.67	93.63
27	93.67	93.63
28	93.67	93.63
29	93.67	93.63
30	93.67	93.63
31	93.67	93.63
32	93.66	93.63
33	93.67	93.63
34	93.67	93.63
35	93.67	93.63
36	93.66	93.63
37	93.66	93.63
38	93.66	93.63
39	93.66	93.63
40	93.66	93.63
41	93.66	93.63
42	93.66	93.63
43	93.66	93.63
44	93.66	93.63
45	93.66	93.63
46	93.66	93.62
47	93.66	93.63
48	93.66	93.62
49	93.66	93.62
50	93.66	93.62
51	93.66	93.62
52	93.66	93.62
53	93.66	93.62
54	93.66	93.62
55	93.66	93.62
56	93.66	93.62
57	93.66	93.62
58	93.65	93.62
59	93.65	93.62
60	93.66	93.62
61	93.66	93.62
62	93.66	93.62
63	93.65	93.62
64	93.65	93.62
65	93.66	93.62

nw-22  
P-31

Time	Slug In	Slug Out
66	93.65	93.62
67	93.66	93.62
68	93.65	93.62
69	93.65	93.62
70	93.65	93.62
71	93.65	93.62
72	93.65	93.62
73	93.65	93.63
74	93.65	93.63
75	93.65	93.63
76	93.65	93.63
77	93.65	93.63
78	93.65	93.63
79	93.65	93.63
80	93.65	93.62
81	93.65	93.62
82	93.65	93.62
83	93.65	93.62
84	93.65	93.62
85	93.65	93.62
86	93.65	93.62
87	93.65	93.62
88	93.65	93.62
89	93.65	93.63
90		93.63
91		93.63
92		93.63
93		93.63
94		93.63
95		93.63
96		93.63
97		93.63
98		93.63
99		93.63
100		93.63
101		93.63
102		93.63
103		93.63
104		93.63
105		93.63

nw-22  
P-31

Time	Slug In	Slug Out
106		93.63
107		93.63
108		93.63
109		93.63
110		93.63
111		93.63
112		93.63
113		93.63
114		93.63
115		93.63
116		93.63
117		93.63
118		93.63
119		93.63
120		93.63
121		93.63
122		93.62
123		93.62
124		93.63
125		93.63
126		93.63
127		93.63
128		93.63
129		93.63
130		93.63
131		93.63
132		93.63
133		93.62
134		93.62
135		93.62
136		93.62
137		93.62
138		93.62
139		93.62

34  
12/19/97

W-23

Time	Slug In	Slug Out
66	39.47	39.85
67	39.47	39.84
68	39.47	39.83
69	39.47	39.83
70	39.47	39.82
71	39.48	39.82
72	39.48	39.81
73	39.48	39.81
74	39.48	39.8
75	39.48	39.8
76	39.48	39.79
77	39.48	39.79
78	39.48	39.78
79	39.48	39.78
80	39.47	39.77
81	39.48	39.77
82	39.48	39.77
83	39.48	39.76
84	39.48	39.76
85	39.48	39.76
86	39.48	39.75
87	39.49	39.75
88	39.48	39.74
89	39.49	39.74
90	39.48	39.73
91	39.48	39.73
92	39.49	39.73
93	39.48	39.72
94	39.48	39.72
95	39.48	39.71
96	39.48	39.71
97	39.48	39.71
98	39.49	39.7
99	39.49	39.7
100	39.48	39.7
101	39.49	39.69
102	39.49	39.69
103	39.48	39.69
104	39.48	39.68
105	39.48	39.68

W-23

Time	Slug In	Slug Out
106	39.48	39.67
107	39.48	39.67
108	39.48	39.67
109	39.48	39.66
110	39.48	39.66
111	39.48	39.66
112	39.48	39.66
113	39.48	39.65
114	39.48	39.65
115	39.48	39.64
116	39.48	39.64
117	39.48	39.64
118	39.48	39.63
119	39.48	39.63
120	39.48	39.63
121	39.47	39.62
122	39.48	39.62
123	39.48	39.61
124	39.47	39.61
125	39.48	39.61
126	39.48	39.6
127	39.47	39.6
128	39.47	39.6
129	39.47	39.6
130	39.47	39.6
131	39.48	39.59
132	39.47	39.59
133	39.47	39.59
134	39.47	39.58
135	39.47	39.58
136	39.47	39.58
137	39.47	39.57
138	39.47	39.57
139	39.46	39.57
140	39.46	39.56
141	39.47	39.56
142	39.46	39.56
143	39.46	39.56
144	39.46	39.55
145	39.45	39.55

W-23

Time	Slug In	Slug Out
146	39.45	39.54
147	39.45	39.54
148	39.45	39.54
149	39.45	39.54
150	39.45	39.54
151	39.45	39.53
152	39.45	39.53
153	39.44	39.53
154	39.44	39.53
155	39.44	39.52
156	39.44	39.52
157	39.44	39.52
158	39.44	39.52
159	39.44	39.51
160	39.44	39.51
161	39.44	39.51
162	39.44	39.5
163	39.44	39.5
164	39.43	39.5
165	39.43	39.5
166	39.43	39.49
167	39.43	39.49
168	39.43	39.49
169	39.43	39.48
170	39.43	39.48
171	39.43	39.48
172	39.43	39.48
173	39.43	39.48
174	39.43	39.47
175	39.43	39.47
176	39.43	39.47
177	39.43	39.47
178	39.43	39.46
179	39.42	39.46
180	39.42	39.46
181		39.46
182		39.45
183		39.45
184		39.45
185		39.45

W-23

Time	Slug In
186	
187	
188	
189	
190	
191	
192	
193	
194	
195	
196	
197	
198	
199	
200	
201	
202	
203	
204	
205	
206	
207	
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12/19/97



SE1000B  
Environmental Logger  
15-Aug

19:43

~~P30~~ rw-23 (JH) 12/19/92

Unit# 331 Test# 1

INPUT 1:00 Level (F) TOC

Reference 39.89  
Scale factor 9.97  
Offset 0.03

Step# 0 14-Aug 10:40  
Step# 1 14-Aug 13:41

P30 rw-23				P30 rw-23				P30 rw-23			
Time	Slug In	Slug Out		Time	Slug In	Slug Out		Time	Slug In	Slug Out	
0	39.88	39.42		1.3333	38.42	41.06		26	39.33	40.16	
0.0033	39.88	39.51		1.4166	38.41	41.05		27	39.34	40.15	
0.0066	39.88	40.4		1.5	38.45	41.03		28	39.35	40.13	
0.0099	39.87	40		1.5833	38.47	41.02		29	39.35	40.13	
0.0133	39.88	40.06		1.6667	38.49	41.01		30	39.36	40.12	
0.0166	38.19	40.09		1.75	38.51	41		31	39.37	40.1	
0.02	38.17	39.45		1.8333	38.52	40.99		32	39.37	40.09	
0.0233	38.03	40.49		1.9167	38.54	40.98		33	39.38	40.08	
0.0266	38.25	39.99		2	38.55	40.97		34	39.38	40.07	
0.03	37.52	39.72		2.5	38.62	40.91		35	39.39	40.06	
0.0333	36.66	40.68		3	38.68	40.86		36	39.39	40.06	
0.05	37.48	42.07		3.5	38.74	40.81		37	39.4	40.04	
0.0666	36.87	41.81		4	38.78	40.77		38	39.4	40.03	
0.0833	37.47	41.72		4.5	38.82	40.74		39	39.4	40.03	
0.1	37.85	41.67		5	38.86	40.7		40	39.41	40.01	
0.1166	38.29	41.62		5.5	38.89	40.68		41	39.41	40.01	
0.1333	37.76	41.58		6	38.92	40.65		42	39.42	40	
0.15	37.77	41.55		6.5	38.95	40.62		43	39.42	40	
0.1666	37.8	41.53		7	38.97	40.6		44	39.42	39.99	
0.1833	37.79	41.5		7.5	39	40.58		45	39.43	39.98	
0.2	37.99	41.48		8	39.02	40.56		46	39.43	39.97	
0.2166	37.96	41.46		8.5	39.04	40.54		47	39.47	39.97	
0.2333	37.93	41.44		9	39.06	40.52		48	39.43	39.96	
0.25	37.99	41.43		9.5	39.08	40.5		49	39.44	39.95	
0.2666	38	41.42		10	39.09	40.48		50	39.44	39.94	
0.2833	38.02	41.4		11	39.13	40.45		51	39.44	39.94	
0.3	38.03	41.59		12	39.15	40.42		52	39.45	39.93	
0.3166	38.04	41.43		13	39.17	40.39		53	39.45	39.92	
0.3333	38.05	41.37		14	39.19	40.37		54	39.45	39.9	
0.4167	38.13	41.31		15	39.21	40.34		55	39.45	39.9	
0.5	38.14	41.27		16	39.22	40.32		56	39.46	39.9	
0.5833	38.19	41.24		17	39.23	40.3		57	39.46	39.89	
0.6667	38.23	41.21		18	39.24	40.28		58	39.46	39.89	
0.75	38.25	41.19		19	39.26	40.27		59	39.46	39.89	
0.8333	38.29	41.17		20	39.27	40.25		60	39.46	39.87	
0.9167	38.31	41.15		21	39.28	40.23		61	39.46	39.87	
1	38.34	41.13		22	39.29	40.22		62	39.46	39.87	
1.0833	38.38	41.11		23	39.31	40.2		63	39.47	39.87	
1.1667	38.38	41.09		24	39.31	40.19		64	39.47	39.86	
1.25	38.39	41.08		25	39.32	40.17		65	39.47	39.85	

rw-23 P-30				rw-23 P-30				rw-23 P-30			
Slug Out	Time	Slug In	Slug Out	Time	Slug In	Slug Out	Time	Slug In	Slug Out		
39.44	226		39.35	266		39.27		306	39.19		
39.44	227		39.35	267		39.26		307	39.19		
39.44	228		39.35	268		39.26		308	39.19		
39.43	229		39.34	269		39.26		309	39.19		
39.43	230		39.34	270		39.26		310	39.18		
39.43	231		39.34	271		39.26		311	39.18		
39.43	232		39.34	272		39.25		312	39.18		
39.43	233		39.34	273		39.25		313	39.18		
39.43	234		39.33	274		39.25		314	39.18		
39.42	235		39.33	275		39.25		315	39.18		
39.42	236		39.33	276		39.25		316	39.17		
39.42	237		39.33	277		39.25		317	39.17		
39.42	238		39.32	278		39.24		318	39.17		
39.41	239		39.32	279		39.24		319	39.17		
39.41	240		39.32	280		39.24		320	39.17		
39.41	241		39.32	281		39.24		321	39.17		
39.41	242		39.31	282		39.24		322	39.16		
39.4	243		39.31	283		39.23		323	39.16		
39.4	244		39.31	284		39.23		324	39.16		
39.4	245		39.31	285		39.23		325	39.16		
39.4	246		39.31	286		39.23		326	39.16		
39.39	247		39.31	287		39.23		327	39.15		
39.39	248		39.3	288		39.22		328	39.15		
39.39	249		39.3	289		39.22		329	39.15		
39.39	250		39.3	290		39.22		330	39.15		
39.38	251		39.3	291		39.22		331	39.15		
39.38	252		39.29	292		39.22					
39.38	253		39.29	293		39.21					
39.38	254		39.29	294		39.21					
39.37	255		39.29	295		39.21					
39.37	256		39.29	296		39.21					
39.37	257		39.29	297		39.21					
39.37	258		39.28	298		39.21					
39.37	259		39.28	299		39.2					
39.36	260		39.28	300		39.2					
39.36	261		39.28	301		39.2					
39.36	262		39.27	302		39.2					
39.36	263		39.27	303		39.2					
39.35	264		39.27	304		39.2					
39.35	265		39.27	305		39.2					

SE1000B  
Environmental Logger  
23-Aug

15:12

~~P-29~~ *rw-24*

*(JH) 12/19/97*

Unit# 331 Test# 2

INPUT 1:00 Level (F) TOC

Reference 16.5  
Scale factor 9.97  
Offset 0.03

Step# 0 16-Aug 18:01  
Step# 1 16-Aug 20:00

*rw-24*  
~~P-29~~

Time	Slug In	Slug Out
0	16.52	16.8
0.0033	16.52	16.83
0.0066	16.52	17.62
0.0099	16.52	17.38
0.0133	16.52	17.59
0.0166	16.52	17.87
0.02	16.52	18.12
0.0233	16.57	18.39
0.0266	16.49	18.48
0.03	16.54	18.46
0.0333	16.63	18.43
0.05	16.02	18.39
0.0666	15.33	18.41
0.0833	14.49	18.38
0.1	14.31	18.36
0.1166	14.4	18.39
0.1333	14.31	18.34
0.15	14.15	18.25
0.1666	13.95	18.34
0.1833	14.15	18.34
0.2	13.99	18.34
0.2166	14.3	18.34
0.2333	14.1	18.34
0.25	14.58	18.34
0.2666	14.42	18.34
0.2833	14.09	18.33
0.3	14.15	18.33
0.3166	14.18	18.33
0.3333	14.2	18.33
0.4167	14.18	18.33
0.5	14.22	18.32
0.5833	14.23	18.32
0.6667	14.26	18.31
0.75	14.26	18.31
0.8333	14.28	18.3
0.9167	14.29	18.29
1	14.31	18.29
1.0833	14.31	18.28
1.1667	14.33	18.28
1.25	14.34	18.28

*rw-24*  
~~P-29~~

Time	Slug In	Slug Out
1.3333	14.35	18.27
1.4166	14.37	18.27
1.5	14.38	18.26
1.5833	14.39	18.26
1.6667	14.39	18.25
1.75	14.42	18.25
1.8333	14.42	18.24
1.9167	14.43	18.24
2	14.44	18.23
2.5	14.49	18.21
3	14.55	18.18
3.5	14.6	18.16
4	14.67	18.14
4.5	14.74	18.11
5	14.8	18.09
5.5	14.86	18.07
6	14.92	18.05
6.5	14.98	18.03
7	15.03	18
7.5	15.08	17.99
8	15.12	17.96
8.5	15.17	17.94
9	15.21	17.93
9.5	15.25	17.9
10	15.29	17.88
11	15.38	17.85
12	15.45	17.81
13	15.51	17.77
14	15.58	17.74
15	15.63	17.71
16	15.69	17.68
17	15.75	17.65
18	15.8	17.62
19	15.84	17.59
20	15.89	17.57
21	15.93	17.54
22	15.97	17.51
23	16.01	17.49
24	16.04	17.46
25	16.08	17.44

*rw-24*  
~~P-29~~

Time	Slug In	Slug Out
26	16.11	17.42
27	16.15	17.4
28	16.18	17.38
29	16.21	17.36
30	16.23	17.34
31	16.26	17.32
32	16.29	17.3
33	16.31	17.29
34	16.33	17.27
35	16.35	17.25
36	16.38	17.24
37	16.4	17.22
38	16.42	17.21
39	16.44	17.19
40	16.45	17.18
41	16.47	17.17
42	16.49	17.15
43	16.5	17.14
44	16.52	17.13
45	16.53	17.12
46	16.54	17.11
47	16.55	17.1
48	16.57	17.09
49	16.58	17.08
50	16.59	17.07
51	16.6	17.06
52	16.61	17.05
53	16.62	17.04
54	16.63	17.04
55	16.64	17.03
56	16.65	17.02
57	16.66	17.01
58	16.67	17.01
59	16.67	17
60	16.68	17
61	16.69	16.99
62	16.69	16.99
63	16.7	16.98
64	16.71	16.97
65	16.71	16.97

*(JH) 12/19/97*

*000501*

~~P-29~~ RW-24

Time	Slug In	Slug Out
66	16.72	16.96
67	16.72	16.96
68	16.73	16.95
69	16.73	16.95
70	16.73	16.95
71	16.74	16.94
72	16.74	16.94
73	16.75	16.93
74	16.75	16.93
75	16.75	16.93
76	16.76	16.92
77	16.76	16.92
78	16.76	16.92
79	16.77	16.91
80	16.77	16.91
81	16.77	16.91
82	16.78	16.9
83	16.78	16.9
84	16.78	16.9
85	16.78	16.9
86	16.78	16.9
87	16.78	16.89
88	16.78	16.89
89	16.79	16.89
90	16.79	16.89
91	16.79	16.88
92	16.79	16.88
93	16.79	16.88
94	16.79	16.88
95	16.79	16.88
96	16.8	16.88
97	16.8	16.87
98	16.8	16.87
99	16.8	16.87
100	16.8	16.87
101	16.8	16.87
102	16.8	16.87
103	16.8	16.86
104	16.8	16.86
105	16.8	16.86

~~P-29~~ RW-24

Time	Slug In	Slug Out
106	16.8	16.86
107	16.8	16.86
108	16.81	16.86
109	16.81	16.86
110	16.81	16.86
111	16.81	16.86
112	16.81	16.85
113	16.81	16.85
114	16.81	16.85
115	16.81	16.85
116	16.81	16.85
117	16.81	16.85
118	16.81	16.85
119		16.85
120		16.85
121		16.85
122		16.85
123		16.85
124		16.84
125		16.84
126		16.84
127		16.84
128		16.84
129		16.84
130		16.84
131		16.84
132		16.84
133		16.84
134		16.84
135		16.84
136		16.84
137		16.84
138		16.84
139		16.84
140		16.84
141		16.84
142		16.84
143		16.84
144		16.84
145		16.84

~~P-29~~ RW-24

Time	Slug In	Slug Out
146		16.84
147		16.84
148		16.84
149		16.84
150		16.84
151		16.84
152		16.84
153		16.84
154		16.84
155		16.84
156		16.84
157		16.84
158		16.84
159		16.83
160		16.84
161		16.84
162		16.83
163		16.83
164		16.83
165		16.83
166		16.83
167		16.83
168		16.83
169		16.83
170		16.83
171		16.83
172		16.83
173		16.83
174		16.83
175		16.83
176		16.83
177		16.83
178		16.83
179		16.83
180		16.83
181		16.83
182		16.83
183		16.83
184		16.83
185		16.83

~~P-29~~ RW-24 (K) 12/19/92

Time	Slug In	Slug Out
186		16.83
187		16.83
188		16.83
189		16.83
190		16.83
191		16.83
192		16.83
193		16.83
194		16.83
195		16.83
196		16.83
197		16.83
198		16.83
199		16.83
200		16.83
201		16.83
202		16.83
203		16.83
204		16.83
205		16.83
206		16.83
207		16.82
208		16.82
209		16.82
210		16.83
211		16.82
212		16.83
213		16.82
214		16.82
215		16.82
216		16.82
217		16.82
218		16.82
219		16.82
220		16.82
221		16.82
222		16.82
223		16.82
224		16.82
225		16.82

rw-24  
P-29

Time	Slug In	Slug Out
226		16.82
227		16.82
228		16.82
229		16.82
230		16.82
231		16.82
232		16.82
233		16.82
234		16.82
235		16.82
236		16.82
237		16.82
238		16.82
239		16.82
240		16.82
241		16.82
242		16.82
243		16.82
244		16.82
245		16.82
246		16.82
247		16.82
248		16.82
249		16.82
250		16.82
251		16.82
252		16.82
253		16.82
254		16.82
255		16.82
256		16.82
257		16.82
258		16.82
259		16.82
260		16.82
261		16.82
262		16.82
263		16.81
264		16.81
265		16.81

rw-24  
P-29

Time	Slug In	Slug Out
266		16.81
267		16.81
268		16.81
269		16.81
270		16.81
271		16.81
272		16.81
273		16.81
274		16.81
275		16.81
276		16.81
277		16.81
278		16.81
279		16.81
280		16.81
281		16.81
282		16.81
283		16.81
284		16.81
285		16.81
286		16.81
287		16.81
288		16.81
289		16.81
290		16.81
291		16.8
292		16.81
293		16.8
294		16.8
295		16.81
296		16.8
297		16.81
298		16.8
299		16.8
300		16.8
301		16.8
302		16.8
303		16.8
304		16.8
305		16.8

rw-24  
P-29

Time	Slug In	Slug Out
306		16.8
307		16.8
308		16.8
309		16.8
310		16.8
311		16.8
312		16.8
313		16.8
314		16.8
315		16.8
316		16.8
317		16.8
318		16.8
319		16.8
320		16.8
321		16.8
322		16.8
323		16.8
324		16.8
325		16.8
326		16.8
327		16.8
328		16.79
329		16.8
330		16.8
331		16.79
332		16.79
333		16.79
334		16.79
335		16.79
336		16.79
337		16.79
338		16.79
339		16.79
340		16.79
341		16.79
342		16.79
343		16.79
344		16.79
345		16.79

rw-24  
P-29

(14) 12/19/97

Time	Slug In	Slug Out
346		16.79
347		16.79
348		16.79
349		16.79
350		16.79
351		16.79
352		16.79
353		16.79
354		16.79
355		16.79
356		16.79
357		16.79
358		16.79
359		16.79
360		16.79
361		16.79
362		16.78
363		16.79
364		16.79
365		16.79
366		16.79
367		16.79
368		16.79
369		16.79
370		16.79
371		16.78
372		16.78
373		16.78
374		16.78
375		16.78
376		16.78
377		16.78
378		16.78
379		16.78
380		16.78
381		16.78
382		16.78
383		16.78
384		16.78
385		16.78

rw-24  
P-29

Time	Slug In	Slug Out
386		16.78
387		16.78
388		16.78
389		16.78
390		16.78
391		16.78
392		16.78
393		16.78
394		16.78
395		16.78
396		16.78
397		16.78
398		16.78
399		16.78
400		16.78
401		16.78
402		16.78
403		16.78
404		16.78
405		16.78
406		16.78
407		16.78
408		16.78
409		16.78
410		16.78
411		16.78
412		16.78
413		16.78
414		16.78
415		16.78
416		16.78
417		16.78
418		16.78
419		16.78
420		16.78
421		16.78
422		16.78
423		16.78
424		16.78
425		16.77

rw-24  
P-29

Time	Slug In	Slug Out
426		16.77
427		16.77
428		16.78
429		16.77
430		16.77
431		16.78
432		16.77
433		16.77
434		16.77
435		16.77
436		16.77
437		16.78
438		16.77
439		16.77
440		16.77
441		16.78
442		16.78
443		16.77
444		16.77
445		16.77
446		16.77
447		16.77
448		16.77
449		16.77
450		16.77
451		16.77
452		16.77
453		16.77
454		16.77
455		16.77
456		16.77
457		16.77
458		16.77
459		16.77
460		16.77
461		16.77
462		16.77
463		16.77
464		16.77
465		16.77

rw-24  
P-29

Time	Slug In	Slug Out
466		16.77
467		16.77
468		16.77
469		16.77
470		16.77
471		16.77
472		16.77
473		16.77
474		16.77
475		16.77
476		16.77
477		16.77
478		16.77
479		16.77
480		16.77
481		16.76
482		16.77
483		16.77
484		16.76
485		16.76
486		16.76
487		16.76
488		16.76
489		16.76
490		16.77
491		16.77
492		16.76
493		16.77
494		16.76
495		16.77
496		16.77
497		16.76
498		16.77
499		16.76
500		16.77
501		16.77
502		16.77
503		16.76
504		16.77
505		16.77

rw-24  
P-29  
SH  
12/19/97

Time	Slug In	Slug Out
506		16.77
507		16.77
508		16.77
509		16.77
510		16.77
511		16.76
512		16.76
513		16.76
514		16.76
515		16.77
516		16.77
517		16.76
518		16.76
519		16.76
520		16.76
521		16.77
522		16.76
523		16.76
524		16.76
525		16.76
526		16.76
527		16.76
528		16.76
529		16.76
530		16.76
531		16.76
532		16.76
533		16.76
534		16.76
535		16.76
536		16.76
537		16.76
538		16.76
539		16.76
540		16.76
541		16.76
542		16.76
543		16.76
544		16.76
545		16.76

rw-24  
P-29

Time	Slug In	Slug Out
546		16.76
547		16.76
548		16.76
549		16.76
550		16.76
551		16.76
552		16.76
553		16.76
554		16.76
555		16.76
556		16.76
557		16.76
558		16.76
559		16.76
560		16.76
561		16.76
562		16.76
563		16.76
564		16.76
565		16.76
566		16.76
567		16.75
568		16.76
569		16.76
570		16.76
571		16.76
572		16.76
573		16.76
574		16.76
575		16.76
576		16.75
577		16.75
578		16.76
579		16.76
580		16.75
581		16.76
582		16.75
583		16.76
584		16.76
585		16.76

rw-24  
P-29

Time	Slug In	Slug Out
586		16.75
587		16.75
588		16.76
589		16.76
590		16.75
591		16.75
592		16.76
593		16.75
594		16.75
595		16.75
596		16.76
597		16.75
598		16.76
599		16.76
600		16.76
601		16.75
602		16.75
603		16.75
604		16.75
605		16.75
606		16.76
607		16.75
608		16.76
609		16.75
610		16.76
611		16.76
612		16.76
613		16.75
614		16.76
615		16.76
616		16.76
617		16.75
618		16.76
619		16.76
620		16.75
621		16.75
622		16.76
623		16.76
624		16.75
625		16.76

rw-24  
P-29

Time	Slug In	Slug Out
626		16.76
627		16.76
628		16.76
629		16.76
630		16.76
631		16.75
632		16.75
633		16.76
634		16.76
635		16.76
636		16.76
637		16.76
638		16.76
639		16.76
640		16.76
641		16.76
642		16.75
643		16.76
644		16.76
645		16.75
646		16.76
647		16.76
648		16.76
649		16.76
650		16.76
651		16.76
652		16.76
653		16.76
654		16.76
655		16.76
656		16.75
657		16.76
658		16.76
659		16.76
660		16.76
661		16.76
662		16.76
663		16.75
664		16.76
665		16.75

rw-24  
P-29  
12/19/97

Time	Slug In	Slug Out
666		16.76
667		16.76
668		16.76
669		16.76
670		16.76
671		16.76
672		16.76
673		16.75
674		16.76
675		16.76
676		16.76
677		16.76
678		16.76
679		16.76
680		16.75
681		16.76
682		16.76
683		16.76
684		16.76
685		16.76
686		16.75
687		16.76
688		16.76
689		16.76
690		16.76
691		16.76
692		16.76
693		16.76
694		16.76
695		16.76
696		16.76
697		16.76
698		16.76

2/1/96 2:10 PM

g:\proj\120\aqtest\VP29MC.XLS

000505 (JH) 12/19/97

SE1000B

Environmental Logger

15-Aug

19:57

P-285 MW-255 (14) 12/19/97

Unit# 331 Test# 3

INPUT 1:00 Level (F) TOC

Reference 94.2

Scale factor 9.97

Offset 0.03

Step# 0 15-Aug 7:55

Step# 1 15-Aug 10:02

MW-255  
P-285

Time	Slug In	Slug Out
0	95.28	95.25
0.0033	95.28	95.28
0.0066	95.28	95.59
0.0099	95.28	96.07
0.0133	95.26	96.11
0.0166	95.27	95.97
0.02	95.27	96.15
0.0233	95.28	96.65
0.0266	95.28	97.03
0.03	95.28	97.05
0.0333	95.27	96.78
0.05	94.26	96.75
0.0666	93.99	96.7
0.0833	93.65	96.67
0.1	93.37	96.65
0.1166	93.39	96.64
0.1333	93.47	96.61
0.15	93.52	96.59
0.1666	93.55	96.57
0.1833	93.62	96.56
0.2	93.52	96.54
0.2166	93.48	96.52
0.2333	93.54	96.52
0.25	93.57	96.51
0.2666	93.61	96.5
0.2833	93.64	96.48
0.3	93.67	96.47
0.3166	93.7	96.46
0.3333	93.73	96.45
0.4167	93.85	96.41
0.5	93.95	96.37
0.5833	94.04	96.34
0.6667	94.1	96.31
0.75	94.13	96.29
0.8333	94.19	96.26
0.9167	94.23	96.24
1	94.27	96.22
1.0833	94.31	96.21
1.1667	94.34	96.19
1.25	94.37	96.18
1.3333	94.4	96.16
1.4166	94.43	96.15

MW-255  
P-285

Time	Slug In	Slug Out
1.5	94.45	96.14
1.5833	94.48	96.12
1.6667	94.49	96.11
1.75	94.52	96.1
1.8333	94.54	96.09
1.9167	94.56	96.08
2	94.58	96.07
2.5	94.68	96.01
3	94.75	95.96
3.5	94.81	95.91
4	94.86	95.87
4.5	94.9	95.84
5	94.95	95.8
5.5	94.98	95.78
6	95	95.75
6.5	95.03	95.72
7	95.05	95.7
7.5	95.06	95.69
8	95.07	95.67
8.5	95.09	95.65
9	95.1	95.63
9.5	95.12	95.62
10	95.13	95.6
11	95.15	95.57
12	95.16	95.56
13	95.18	95.54
14	95.18	95.52
15	95.19	95.51
16	95.2	95.49
17	95.21	95.47
18	95.21	95.47
19	95.22	95.46
20	95.22	95.44
21	95.23	95.44
22	95.23	95.43
23	95.23	95.43
24	95.24	95.42
25	95.24	95.41
26	95.24	95.41
27	95.24	95.4
28	95.24	95.4
29	95.25	95.4

MW-255  
P-285

Time	Slug In	Slug Out
30	95.25	95.4
31	95.25	95.39
32	95.25	95.39
33	95.25	95.38
34	95.26	95.38
35	95.26	95.38
36	95.26	95.38
37	95.26	95.38
38	95.26	95.37
39	95.26	95.37
40	95.26	95.37
41	95.26	95.37
42	95.26	95.37
43	95.26	95.36
44	95.26	95.36
45	95.26	95.36
46	95.26	95.36
47	95.26	95.35
48	95.26	95.35
49	95.26	95.35
50	95.26	95.35
51	95.26	95.35
52	95.26	95.35
53	95.26	95.35
54	95.27	95.35
55	95.26	95.34
56	95.27	95.35
57	95.27	95.35
58	95.27	95.34
59	95.27	95.34
60	95.26	95.34
61	95.26	95.34
62	95.26	95.34
63	95.26	95.34
64	95.27	95.34
65	95.26	95.34
66	95.26	95.34
67	95.26	95.34
68	95.26	95.34
69	95.26	95.34
70	95.25	95.34
71	95.25	95.34

2/1/96 1:50 PM

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000498 (14) 12/19/97



Pw-255  
~~P-285~~

Time	Slug In	Slug Out
72	95.24	95.34
73	95.25	95.34
74	95.25	95.35
75	95.25	95.35
76	95.26	95.34
77	95.25	95.34
78	95.26	95.34
79	95.26	95.35
80	95.26	95.34
81	95.26	95.34
82	95.26	95.34
83	95.26	95.34
84	95.26	95.34
85	95.26	95.34
86	95.27	95.34
87	95.27	95.34
88	95.27	95.34
89	95.27	95.35
90	95.27	95.34
91	95.27	95.34
92	95.27	95.34
93	95.27	95.34
94	95.27	95.34
95	95.27	95.34
96	95.27	95.34
97	95.27	95.34
98	95.27	95.33
99	95.27	95.34
100	95.27	95.34
101	95.27	95.34
102	95.27	95.34
103	95.27	95.34
104	95.27	95.33
105	95.27	95.34
106	95.27	95.34
107	95.27	95.34
108	95.27	95.34
109	95.27	95.34
110	95.27	95.34
111	95.27	95.34
112	95.27	95.34
113	95.27	95.34

Pw-255  
~~P-285~~

Time	Slug In	Slug Out
114	95.27	95.34
115	95.27	95.34
116	95.27	95.34
117	95.27	95.34
118	95.27	95.34
119	95.27	95.34
120	95.28	95.34
121	95.27	95.34
122	95.27	95.34
123	95.27	95.34
124	95.27	95.34
125	95.27	95.34
126	95.28	95.34
127	95.25	95.34
128		95.34
129		95.34
130		95.34
131		95.34
132		95.34
133		95.34
134		95.34
135		95.33
136		95.34
137		95.34
138		95.34
139		95.34
140		95.34
141		95.34
142		95.34
143		95.34
144		95.33
145		95.34
146		95.33
147		95.34
148		95.34
149		95.34
150		95.34
151		95.34
152		95.34
153		95.34
154		95.34
155		95.34

Pw-255  
~~P-285~~

Time	Slug In	Slug Out
156		95.34
157		95.34
158		95.34
159		95.33
160		95.33
161		95.34
162		95.34
163		95.33
164		95.34
165		95.34
166		95.34
167		95.34
168		95.34
169		95.34
170		95.34
171		95.34
172		95.34
173		95.34
174		95.34
175		95.34
176		95.34
177		95.34
178		95.33
179		95.34
180		95.34
181		95.34
182		95.34
183		95.34
184		95.33
185		95.34
186		95.34
187		95.34
188		95.34
189		95.34
190		95.34
191		95.34
192		95.34
193		95.34
194		95.34
195		95.34
196		95.33

SE1000B

Environmental Logger

17-Oct

11:23

-28D MW-25D

JH 12/4/97

Unit# 331 Test# 2

INPUT 1:00 Level (F) TOC

Reference 16.67

Scale factor 9.97

Offset 0.03

Step# 0 13-Oct 7:50

Step# 1 13-Oct 12:51

MW-25D  
P-28DMW-25D  
P-28DMW-25D  
P-28D

Time	Slug In	Slug Out
0	16.8	16.67
0.0033	16.8	16.69
0.0066	16.79	18.17
0.0099	16.81	17.94
0.0133	16.8	17.7
0.0166	16.75	17.36
0.02	16.38	16.78
0.0233	15.14	17.57
0.0266	15.67	17.77
0.03	15.56	17.62
0.0333	14.5	16.95
0.05	13.95	18.49
0.0666	13.62	19.24
0.0833	14.6	19.17
0.1	14.27	19.15
0.1166	14.43	19.12
0.1333	14.41	19.11
0.15	14.43	19.1
0.1666	14.17	19.09
0.1833	14.23	19.09
0.2	14.43	19.08
0.2166	14.48	19.08
0.2333	14.46	19.08
0.25	14.46	19.08
0.2666	14.46	19.08
0.2833	14.46	19.08
0.3	14.47	19.07
0.3166	14.47	19.07
0.3333	14.48	19.07
0.4167	14.49	19.06
0.5	14.48	19.06
0.5833	14.5	19.05
0.6667	14.52	19.05
0.75	14.53	19.04
0.8333	14.53	19.05
0.9167	14.54	19.04
1	14.54	19.03
1.0833	14.55	19.03
1.1667	14.55	19.03
1.25	14.56	19.03
1.3333	14.56	19.02

Time	Slug In	Slug Out
1.4166	14.57	19.02
1.5	14.57	19.02
1.5833	14.58	19.02
1.6667	14.58	19.02
1.75	14.59	19.01
1.8333	14.59	19.01
1.9167	14.6	19.01
2	14.6	19.01
2.5	14.63	18.99
3	14.66	18.98
3.5	14.68	18.97
4	14.71	18.96
4.5	14.73	18.95
5	14.75	18.94
5.5	14.77	18.93
6	14.78	18.92
6.5	14.8	18.91
7	14.82	18.9
7.5	14.83	18.89
8	14.86	18.88
8.5	14.87	18.87
9	14.88	18.86
9.5	14.9	18.85
10	14.91	18.85
12	14.95	18.81
14	15.01	18.78
16	15.05	18.75
18	15.09	18.72
20	15.12	18.69
22	15.16	18.67
24	15.2	18.64
26	15.23	18.62
28	15.26	18.59
30	15.29	18.57
32	15.31	18.55
34	15.34	18.53
36	15.36	18.5
38	15.39	18.48
40	15.41	18.46
42	15.43	18.45
44	15.46	18.43

Time	Slug In	Slug Out
230	16.5	17.53
240	16.53	17.5
250	16.56	17.48
260	16.59	17.46
270	16.61	17.44
280	16.63	17.42
290	16.65	17.4
300	16.67	17.39
310		17.37
320		17.35

2/1/96 1:03 PM

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JH 12/15/97  
000500

SE1000B  
Environmental Logger  
12-Aug 8:49

Unit# 331 Test# 4  
INPUT 1:00 Level (F) TOC  
Reference 17.74  
Scale factor 9.97  
Offset 0.03

Step# 0 10-Aug 17:13  
Step# 1 10-Aug 17:34

rw-27  
P-26

Time	Slug In	Slug Out
0	17.74	17.74
0.0033	17.74	17.74
0.0066	17.74	17.74
0.0099	17.74	17.74
0.0133	17.73	17.68
0.0166	17.28	17.99
0.02	17.53	18.54
0.0233	17.02	17.21
0.0266	16.67	17.95
0.03	16.2	19.38
0.0333	15.74	18.38
0.05	15.56	19.99
0.0666	16.14	19.62
0.0833	16.38	19.33
0.1	16.59	19.07
0.1166	16.77	18.88
0.1333	16.93	18.65
0.15	17.07	18.53
0.1666	17.18	18.4
0.1833	17.28	18.29
0.2	17.36	18.19
0.2166	17.45	18.11
0.2333	17.53	18.05
0.25	17.53	17.96
0.2666	17.57	17.93
0.2833	17.61	17.9
0.3	17.63	17.87
0.3166	17.65	17.85
0.3333	17.67	17.82
0.4167	17.72	17.77
0.5	17.73	17.75
0.5833	17.74	17.74
0.6667	17.74	17.74
0.75	17.74	17.74
0.8333	17.74	17.74
0.9167	17.74	17.74
1	17.74	17.74
1.0833	17.74	17.74
1.1667	17.74	17.74
1.25	17.74	17.74
1.3333	17.74	17.74
1.4166	17.74	17.74
1.5	17.74	17.74
1.5833	17.74	17.74

rw-27  
P-26

Time	Slug In	Slug Out
1.6667	17.74	17.74
1.75	17.74	17.74
1.8333	17.74	17.74
1.9167	17.74	17.74
2	17.74	17.74
2.5	17.74	17.74
3	17.74	17.74
3.5	17.74	17.74
4	17.74	17.74
4.5	17.74	17.74
5	17.74	17.74
5.5	17.74	17.74
6	17.74	17.74
6.5	17.74	17.74
7	17.74	17.74
7.5	17.74	17.74
8	17.74	17.74
8.5	17.74	17.74
9	17.74	17.74
9.5	17.74	17.74
10	17.74	17.74
11	17.74	17.74
12	17.74	17.74
13	17.74	17.74
14	17.74	17.74
15	17.74	17.74
16	17.74	17.74
17	17.74	17.74
18	17.74	17.74
19	17.74	17.74
20	17.74	17.74

54 12/19/97

SE1000B  
Environmental Logger  
2-Aug 17:16

P-25 RW-28 (JH) 12/19/97

Unit# 331 Test# 1  
INPUT 1:00 Level (F) TOC  
Reference 20.1  
Scale factor 9.97  
Offset 0.03  
Step# 0 1-Aug 8:46  
Step# 1 1-Aug 9:07

-P-25 RW-28

Time	Slug In	Slug Out
0	20.1	20.1
0.0033	20.1	20.1
0.0066	20.1	20.1
0.0099	20.08	20.1
0.0133	20.08	20.14
0.0166	20.08	22.46
0.02	20.13	21.89
0.0233	19.64	21.02
0.0266	18.63	20.95
0.03	19.25	20.98
0.0333	18.74	21.03
0.05	17.78	22.6
0.0666	17	22.45
0.0833	17.91	22.34
0.1	17.72	22.25
0.1166	18.99	22.16
0.1333	18.26	22.08
0.15	18.22	22
0.1666	18.35	21.92
0.1833	18.38	21.87
0.2	18.42	21.81
0.2166	18.51	21.75
0.2333	18.54	21.7
0.25	18.59	21.66
0.2666	18.61	21.61
0.2833	18.66	21.56
0.3	18.7	21.52
0.3166	18.74	21.48
0.3333	18.8	21.44
0.4167	18.96	21.26
0.5	19.1	21.12
0.5833	19.22	21
0.6667	19.29	20.9
0.75	19.39	20.82
0.8333	19.46	20.75
0.9167	19.52	20.68
1	19.58	20.63
1.0833	19.6	20.58
1.1667	19.65	20.54
1.25	19.7	20.51
1.3333	19.73	20.47
1.4166	19.78	20.44

P-25 RW-28

Time	Slug In	Slug Out
1.5	19.81	20.42
1.5833	19.81	20.4
1.6667	19.83	20.38
1.75	19.86	20.36
1.8333	19.87	20.34
1.9167	19.89	20.33
2	19.91	20.31
2.5	19.95	20.25
3	20.01	20.21
3.5	20.04	20.19
4	20.05	20.17
4.5	20.06	20.15
5	20.07	20.15
5.5	20.08	20.14
6	20.08	20.13
6.5	20.08	20.13
7	20.09	20.12
7.5	20.09	20.12
8	20.09	20.12
8.5	20.09	20.12
9	20.09	20.11
9.5	20.09	20.11
10	20.09	20.11
11	20.1	20.11
12	20.1	20.11
13	20.1	20.11
14	20.1	20.1
15	20.11	20.11
16	20.11	20.11
17	20.11	20.1
18	20.11	20.11
19	20.11	20.11
20	20.11	20.1
21	20.1	20.1
22		20.1
23		20.1
24		20.1
25		20.1
26		20.1
27		20.1
28		20.1
29		20.1

Developed by Glenn M. Duffield  
(c) 1993, 1994 Geraghty & Miller, Inc.

11:19:30

[illegible]

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Units of Measurement
Length..... ft
Time..... min

```

Initial displacement in well.....	2.31
Radius of well casing.....	0.0833
Radius of wellbore.....	0.25
Aquifer saturated thickness'.....	10.43
Well screen length.....	10
Static height of water in well...	10.43

Gravel pack porosity..... 0.3  
 Effective well casing radius..... 0.1536  
 Effective wellbore radius..... 0.25  
 Log(Re/Rw)..... 2.839  
 Constants A, B and C..... 0.000 , 0.000, 2.297  
 No. of observations..... 15

=====

ANALYTICAL METHOD

Bouwer-Rice (Confined Aquifer Slug Test)

=====

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate	Std. Error
K =	1.3912E-001 +/-	3.2530E-002 ft/min
y0 =	2.9554E+000 +/-	9.2059E-001 ft

ANALYSIS OF MODEL RESIDUALS

residual = observed - calculated

weighted residual = residual \* weight

Weighted Residual Statistics:

Number of residuals..... 8  
 Number of estimated parameters.... 2  
 Degrees of freedom..... 6  
 Residual mean..... 0.006072  
 Residual standard deviation..... 0.118

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0266	0.92	0.97949	-0.059489	1
0.03	1.06	0.85054	0.20946	1
0.0333	0.57	0.74164	-0.17164	1
0.05	0.4	0.37075	0.029251	1
0.0666	0.14	0.18611	-0.04611	1
0.0833	0.12	0.093037	0.026963	1
0.1	0.1	0.046509	0.053491	1
0.1166	0.03	0.023347	0.006653	1

## VISUAL MATCH PARAMETER ESTIMATES

```

      Estimate
K   =  1.3912E-001 ft/min
y0  =  2.9554E+000 ft

```

[illegible]





Gravel pack porosity..... 0.3  
 Effective well casing radius..... 0.1536  
 Effective wellbore radius..... 0.25  
 Log(Re/Rw)..... 2.839  
 Constants A, B and C..... 0.000 , 0.000, 2.297  
 No. of observations..... 34

=====

ANALYTICAL METHOD

Bouwer-Rice (Confined Aquifer Slug Test)

=====

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate	Std. Error
K =	1.0201E-001 +/-	2.6660E-002 ft/min
y0 =	1.7810E+000 +/-	3.0832E-001 ft

ANALYSIS OF MODEL RESIDUALS

residual = observed - calculated  
 weighted residual = residual \* weight

Weighted Residual Statistics:

Number of residuals..... 12  
 Number of estimated parameters.... 2  
 Degrees of freedom..... 10  
 Residual mean..... -0.01483  
 Residual standard deviation..... 0.2219



SE1000B  
Environmental Logger

10-Aug 8:12

~~P-245~~ RW-305 34 12/19/97

Unit# 331 Test# 4  
INPUT 1:00 Level (F) TOC  
Reference 26.88  
Scale factor 9.97  
Offset 0.03

Step# 0 9-Aug 11:02  
Step# 1 9-Aug 11:28

RW-305  
P-245

Time	Slug In	Slug Out
0	26.9	26.88
0.0033	26.9	26.88
0.0066	26.89	26.98
0.0099	26.89	28.74
0.0133	27.18	28.21
0.0166	26.85	26.74
0.02	26.9	27.66
0.0233	26.84	27.17
0.0266	26.91	26.33
0.03	26.88	28.15
0.0333	26.88	27.88
0.05	27.87	28.67
0.0666	25.02	28.8
0.0833	25.48	28.58
0.1	25.41	28.4
0.1166	24.63	28.25
0.1333	26.18	28.11
0.15	25.59	27.98
0.1666	26.09	27.86
0.1833	26.16	27.76
0.2	25.93	27.66
0.2166	26.03	27.58
0.2333	26.12	27.51
0.25	26.21	27.42
0.2666	26.27	27.36
0.2833	26.34	27.32
0.3	26.4	27.26
0.3166	26.46	27.22
0.3333	26.51	27.16
0.4167	27.07	27.02
0.5	27.03	26.95
0.5833	26.99	26.92
0.6667	26.96	26.9
0.75	26.89	26.89
0.8333	26.88	26.88
0.9167	26.87	26.88
1	26.89	26.88
1.0833	26.89	26.88
1.1667	26.89	26.88
1.25	26.89	26.88
1.3333	26.88	26.88

RW-305  
P-248

Time	Slug In	Slug Out
1.4166	26.89	26.88
1.5	26.88	26.88
1.5833	26.89	26.88
1.6667	26.88	26.88
1.75	26.89	26.88
1.8333	26.88	26.88
1.9167	26.89	26.88
2	26.88	26.88
2.5	26.88	26.88
3	26.89	26.88
3.5	26.89	26.88
4	26.88	26.88
4.5	26.88	26.88
5	26.89	26.88
5.5	26.88	26.88
6	26.88	26.88
6.5	26.89	26.88
7	26.89	26.88
7.5	26.88	26.88
8	26.88	26.88
8.5	26.88	26.87
9	26.88	26.87
9.5	26.88	26.87
10	26.88	26.87
11	26.88	26.87
12	26.87	26.87
13	26.88	26.87
14	26.88	26.87
15	26.88	26.88
16	26.88	26.88
17	26.89	26.87
18	26.88	26.87
19	26.88	26.87
20	26.88	26.87
21	26.88	26.87
22	26.88	
23	26.88	
24	26.88	
25	26.88	
26	26.88	

SE1000B  
Environmental Logger  
10-Aug 8:15

P-24 rw-300

SK 12/19/97

Unit# 331 Test# 5

INPUT 1:00 Level (F) TOC

Reference 25.24  
Scale factor 9.97  
Offset 0.03

Step# 0 9-Aug 12:08  
Step# 1 9-Aug 12:20

rw-300 P-24D			rw-300 P-24D			rw-300 P-24D			rw-300 P-24D		
Time	Slug In	Slug Out	Time	Slug In	Slug Out	Time	Slug In	Slug Out	Time	Slug In	Slug Out
0	25.24	25.23	1.4166	24.54	25.86	28		25.23	69		25.24
0.0033	25.24	25.23	1.5	24.59	25.81	29		25.23	70		25.24
0.0066	25.24	25.23	1.5833	24.64	25.77	30		25.23	71		25.24
0.0099	25.24	25.23	1.6667	24.68	25.74	31		25.23	72		25.24
0.0133	25.24	25.23	1.75	24.72	25.71	32		25.24	73		25.24
0.0166	25.24	25.23	1.8333	24.76	25.68	33		25.24	74		25.24
0.02	25.24	25.23	1.9167	24.81	25.65	34		25.24	75		25.24
0.0233	25.24	25.23	2	24.86	25.62	35		25.24	76		25.24
0.0266	25.24	25.23	2.5	25.04	25.5	36		25.24	77		25.24
0.03	25.23	25.23	3	25.12	25.42	37		25.24	78		25.23
0.0333	25.24	25.75	3.5	25.17	25.37	38		25.22	79		25.23
0.05	25.25	26.44	4	25.19	25.33	39		25.23	80		25.23
0.0666	25.22	27.54	4.5	25.2	25.3	40		25.23	81		25.23
0.0833	25.24	27.44	5	25.21	25.29	41		25.23	82		25.23
0.1	25.24	27.39	5.5	25.21	25.28	42		25.22	83		25.23
0.1166	24.76	27.34	6	25.22	25.27	43		25.22	84		25.23
0.1333	24.27	27.3	6.5	25.22	25.26	44		25.22	85		25.23
0.15	23.13	27.25	7	25.22	25.26	45		25.22	86		25.23
0.1666	23.43	27.21	7.5	25.22	25.25	46		25.22	87		25.23
0.1833	23.29	27.18	8	25.22	25.25	47		25.22	88		25.23
0.2	23.35	27.15	8.5	25.22	25.25	48		25.23	89		25.22
0.2166	23.52	27.11	9	25.22	25.25	49		25.26	90		25.22
0.2333	22.99	27.07	9.5	25.22	25.25	50		25.28	91		25.23
0.25	23.84	27.04	10	25.22	25.25	51		25.29	92		25.23
0.2666	23.72	27.01	11	25.22	25.24	52		25.29	93		25.23
0.2833	23.76	26.98	12		25.24	53		25.29	94		25.23
0.3	23.81	26.95	13		25.24	54		25.28	95		25.22
0.3166	23.79	26.92	14		25.24	55		25.26	96		25.22
0.3333	23.57	26.89	15		25.24	56		25.25	97		25.22
0.4167	23.21	26.76	16		25.24	57		25.27	98		25.22
0.5	23.48	26.64	17		25.24	58		25.28	99		25.22
0.5833	23.69	26.53	18		25.23	59		25.26			
0.6667	23.8	26.44	19		25.24	60		25.25			
0.75	23.92	26.35	20		25.23	61		25.24			
0.8333	24.02	26.27	21		25.24	62		25.24			
0.9167	24.11	26.19	22		25.24	63		25.24			
1	24.2	26.12	23		25.24	64		25.24			
1.0833	24.28	26.06	24		25.24	65		25.24			
1.1667	24.35	26	25		25.24	66		25.24			
1.25	24.42	25.95	26		25.24	67		25.25			
1.3333	24.48	25.9	27		25.23	68		25.24			

Version 2.0

14:28:23

Gravel pack porosity..... 0  
 Effective well casing radius..... 0.0833  
 Effective wellbore radius..... 0.25  
 Log(Re/Rw)..... 3.453  
 Constants A, B and C..... 0.000 , 0.000, 2.297  
 No. of observations..... 59

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ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

=====

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate	Std. Error
K =	3.3096E-004 +/-	7.1804E-006 ft/min
y0 =	2.1626E+000 +/-	1.0013E-002 ft

ANALYSIS OF MODEL RESIDUALS

residual = observed - calculated  
 weighted residual = residual \* weight

Weighted Residual Statistics:

Number of residuals..... 37  
 Number of estimated parameters.... 2  
 Degrees of freedom..... 35  
 Residual mean..... 0.0003265  
 Residual standard deviation..... 0.03511

Residual variance..... 0.001232

## Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0666	2.13	2.1232	0.0067863	1
0.0833	2.18	2.1134	0.06656	1
0.1	2.16	2.1037	0.056289	1
0.1166	2.14	2.0941	0.045914	1
0.1333	2.13	2.0844	0.045554	1
0.15	2.11	2.0749	0.035149	1
0.1666	2.09	2.0654	0.024643	1
0.1833	2.07	2.0558	0.01415	1
0.2	2.06	2.0464	0.013614	1
0.2166	2.04	2.037	0.0029776	1
0.2333	2.03	2.0276	0.0023545	1
0.25	2.01	2.0183	-0.0083118	1
0.2666	2	2.0091	-0.0090766	1
0.2833	1.98	1.9998	-0.019828	1
0.3	1.97	1.9906	-0.020623	1
0.3166	1.96	1.9815	-0.021514	1
0.3333	1.94	1.9724	-0.032393	1
0.4167	1.89	1.9275	-0.037465	1
0.5	1.84	1.8836	-0.043613	1
0.5833	1.79	1.8408	-0.050759	1
0.6667	1.75	1.7988	-0.04883	1
0.75	1.71	1.7579	-0.047904	1
0.8333	1.67	1.7179	-0.04791	1
0.9167	1.64	1.6788	-0.038779	1
1	1.6	1.6406	-0.040585	1
1.0833	1.58	1.6033	-0.02326	1
1.1667	1.55	1.5667	-0.01674	1

1.25	1.52	1.5311	-0.011095	1
1.3333	1.49	1.4963	-0.0062609	1
1.4166	1.46	1.4622	-0.0022192	1
1.5	1.43	1.4289	0.0010875	1
1.5833	1.41	1.3964	0.013597	1
1.6667	1.39	1.3646	0.025404	1
1.75	1.37	1.3335	0.036451	1
1.8333	1.35	1.3032	0.04679	1
1.9167	1.32	1.2735	0.046475	1
2	1.3	1.2446	0.055449	1

## RESULTS FROM VISUAL CURVE MATCHING

# VISUAL MATCH PARAMETER ESTIMATES

```

      Estimate
K   =  3.3096E-004 ft/min
y0  =  2.1626E+000 ft

```

[illegible]



Initial displacement in well.....	2.39
Radius of well casing.....	0.0833
Radius of wellbore.....	0.25
Aquifer saturated thickness.....	28.53
Well screen length.....	10
Static height of water in well...	28.53

Gravel pack porosity..... 0  
 Effective well casing radius..... 0.0833  
 Effective wellbore radius..... 0.25  
 Log(Re/Rw)..... 3.453  
 Constants A, B and C..... 0.000 , 0.000, 2.297  
 No. of observations..... 54

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ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

=====

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate	Std. Error
K =	2.4175E-004 +/-	7.8019E-006 ft/min
y0 =	2.1438E+000 +/-	1.8732E-002 ft

ANALYSIS OF MODEL RESIDUALS

residual = observed - calculated  
 weighted residual = residual \* weight

Weighted Residual Statistics:

Number of residuals..... 36  
 Number of estimated parameters.... 2  
 Degrees of freedom..... 34  
 Residual mean..... 0.002199  
 Residual standard deviation..... 0.06061

Residual variance..... 0.003673

## Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.2	2.15	2.059	0.091041	1
0.2166	2.13	2.0521	0.077927	1
0.2333	2.12	2.0452	0.074831	1
0.25	2.11	2.0383	0.071712	1
0.2666	2.09	2.0315	0.058529	1
0.2833	2.08	2.0246	0.055364	1
0.3	2.07	2.0178	0.052175	1
0.3166	2.05	2.0111	0.038924	1
0.3333	2.04	2.0043	0.03569	1
0.4167	1.98	1.9709	0.0091407	1
0.5	1.93	1.938	-0.0080057	1
0.5833	1.88	1.9057	-0.0257	1
0.6667	1.84	1.8739	-0.033895	1
0.75	1.8	1.8427	-0.042657	1
0.8333	1.76	1.8119	-0.051941	1
0.9167	1.73	1.7817	-0.0517	1
1	1.7	1.752	-0.052	1
1.0833	1.67	1.7228	-0.052795	1
1.1667	1.64	1.694	-0.054042	1
1.25	1.61	1.6658	-0.055803	1
1.3333	1.58	1.638	-0.058035	1
1.4166	1.55	1.6107	-0.060729	1
1.5	1.53	1.5838	-0.053847	1
1.5833	1.5	1.5574	-0.057445	1
1.6667	1.48	1.5315	-0.051452	1
1.75	1.46	1.5059	-0.045923	1
1.8333	1.43	1.4808	-0.05082	1

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	5
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# VISUAL MATCH PARAMETER ESTIMATES

[illegible]

SE1000B  
Environmental Logger

12-Aug 8:42

P-7 rw-32 (JP) 12/19/97

Unit# 331 Test# 2

INPUT 1:00 Level (F) TOC

Reference 18.79

Scale factor 9.97

Offset 0.03

Step# 0 10-Aug 13:28

Step# 1 10-Aug 14:18

rw-32  
P-7

Time	Slug In	Slug Out
0	18.79	18.53
0.0033	18.79	18.53
0.0066	18.78	18.67
0.0099	18.79	18.92
0.0133	18.79	19.22
0.0166	18.78	19.26
0.02	18.36	19.31
0.0233	18.14	19.53
0.0266	17.62	19.83
0.03	17.36	20.08
0.0333	16.95	20.27
0.05	16.56	20.5
0.0666	16.76	20.41
0.0833	16.64	20.38
0.1	16.73	20.36
0.1166	16.75	20.34
0.1333	16.72	20.33
0.15	16.77	20.31
0.1666	16.78	20.3
0.1833	16.74	20.3
0.2	16.95	20.28
0.2166	16.81	20.24
0.2333	16.83	20.25
0.25	16.86	20.24
0.2666	16.86	20.23
0.2833	16.88	20.22
0.3	16.91	20.21
0.3166	16.9	20.19
0.3333	16.91	20.18
0.4167	16.98	20.14
0.5	17.03	20.1
0.5833	17.09	20.06
0.6667	17.13	20.03
0.75	17.18	19.99
0.8333	17.23	19.96
0.9167	17.27	19.93
1	17.31	19.9
1.0833	17.35	19.88
1.1667	17.39	19.85
1.25	17.43	19.82
1.3333	17.47	19.8
1.4166	17.5	19.77
1.5	17.53	19.75
1.5833	17.57	19.72
1.6667	17.59	19.7

rw-32  
P-7

Time	Slug In	Slug Out
1.75	17.62	19.68
1.8333	17.65	19.65
1.9167	17.68	19.63
2	17.7	19.62
2.5	17.86	19.51
3	18	19.42
3.5	18.1	19.34
4	18.17	19.26
4.5	18.22	19.2
5	18.26	19.15
5.5	18.29	19.1
6	18.32	19.06
6.5	18.33	19.02
7	18.35	18.99
7.5	18.36	18.97
8	18.38	18.93
8.5	18.39	18.91
9	18.39	18.89
9.5	18.4	18.87
10	18.41	18.85
11	18.42	18.83
12	18.43	18.8
13	18.44	18.78
14	18.45	18.78
15	18.46	18.76
16	18.42	18.74
17	18.46	18.73
18	18.47	18.72
19	18.47	18.71
20	18.48	18.7
21	18.48	18.69
22	18.49	18.69
23	18.49	18.68
24	18.49	18.68
25	18.49	18.67
26	18.49	18.67
27	18.5	18.66
28	18.5	18.65
29	18.5	18.64
30	18.5	18.64
31	18.5	18.64
32	18.5	18.64
33	18.5	18.63
34	18.51	18.63
35	18.5	18.63

rw-32  
P-7

Time	Slug In	Slug Out
36	18.51	18.63
37	18.51	18.63
38	18.51	18.63
39	18.51	18.63
40	18.51	18.63
41	18.51	18.62
42	18.51	18.62
43	18.51	18.62
44	18.51	18.62
45	18.51	18.61
46	18.52	18.61
47	18.52	18.61
48	18.52	18.61
49	18.53	18.61
50	18.53	18.6



Gravel pack porosity..... 0  
 Effective well casing radius..... 0.0833  
 Effective wellbore radius..... 0.25  
 Log(Re/Rw)..... 3.543  
 Constants A, B and C..... 0.000 , 0.000, 2.297  
 No. of observations..... 63

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ANALYTICAL METHOD

Bouwer-Rice (Confined Aquifer Slug Test)

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RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate	Std. Error
K =	4.1901E-004 +/-	1.7190E-005 ft/min
y0 =	1.6283E+000 +/-	1.7949E-002 ft

ANALYSIS OF MODEL RESIDUALS

residual = observed - calculated  
 weighted residual = residual \* weight

Weighted Residual Statistics:

Number of residuals..... 39  
 Number of estimated parameters..... 2  
 Degrees of freedom..... 37  
 Residual mean..... 0.0007539  
 Residual standard deviation..... 0.06335

Residual variance..... 0.004013

## Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0666	1.63	1.5918	0.038224	1
0.0833	1.61	1.5827	0.02726	1
0.1	1.64	1.5738	0.066244	1
0.1166	1.61	1.5649	0.045123	1
0.1333	1.59	1.556	0.034006	1
0.15	1.43	1.5472	-0.11716	1
0.1666	1.85	1.5384	0.31157	1
0.1833	1.52	1.5297	-0.0097	1
0.2	1.51	1.521	-0.011017	1
0.2166	1.51	1.5124	-0.0024351	1
0.2333	1.49	1.5039	-0.01385	1
0.25	1.47	1.4953	-0.025314	1
0.2666	1.46	1.4869	-0.026877	1
0.2833	1.45	1.4784	-0.028437	1
0.3	1.44	1.47	-0.030045	1
0.3166	1.43	1.4618	-0.031751	1
0.3333	1.42	1.4535	-0.033454	1
0.4167	1.37	1.4127	-0.042717	1
0.5	1.33	1.3732	-0.043169	1
0.5833	1.29	1.3347	-0.044728	1
0.6667	1.26	1.2973	-0.037319	1
0.75	1.22	1.261	-0.041001	1
0.8333	1.19	1.2257	-0.0357	1
0.9167	1.16	1.1913	-0.031347	1
1	1.13	1.158	-0.027996	1
1.0833	1.1	1.1256	-0.025578	1
1.1667	1.07	1.094	-0.024031	1



## Mw33asi

1.25	1.05	1.0634	-0.013404	1
1.3333	1.03	1.0336	-0.003635	1
1.4166	1	1.0047	-0.004699	1
1.5	0.98	0.97654	0.0034602	1
1.5833	0.95	0.9492	0.00079786	1
1.6667	0.93	0.9226	0.0074016	1
1.75	0.91	0.89677	0.013229	1
1.8333	0.89	0.87167	0.018334	1
1.9167	0.87	0.84724	0.022764	1
2	0.85	0.82352	0.026482	1
2.5	0.75	0.69447	0.055526	1
3	0.65	0.58565	0.064349	1

[illegible]



Gravel pack porosity..... 0  
 Effective well casing radius..... 0.0833  
 Effective wellbore radius..... 0.25  
 Log(Re/Rw)..... 3.543  
 Constants A, B and C..... 0.000 , 0.000, 2.297  
 No. of observations..... 69

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ANALYTICAL METHOD

Bouwer-Rice (Confined Aquifer Slug Test)

=====

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate	Std. Error
K =	3.7157E-004 +/-	9.4240E-006 ft/min
y0 =	1.6594E+000 +/-	1.0638E-002 ft

ANALYSIS OF MODEL RESIDUALS

residual = observed - calculated  
 weighted residual = residual \* weight

Weighted Residual Statistics:

Number of residuals..... 38  
 Number of estimated parameters.... 2  
 Degrees of freedom..... 36  
 Residual mean..... 0.000661  
 Residual standard deviation..... 0.03689

Residual variance..... 0.001361

## Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0833	1.7	1.6182	0.08182	1
0.1	1.68	1.61	0.069968	1
0.1166	1.67	1.602	0.068027	1
0.1333	1.65	1.5939	0.056093	1
0.15	1.63	1.5859	0.044118	1
0.1666	1.61	1.5779	0.032056	1
0.1833	1.58	1.57	0.010001	1
0.2	1.56	1.5621	-0.0020936	1
0.2166	1.55	1.5543	-0.0042752	1
0.2333	1.53	1.5464	-0.016449	1
0.25	1.52	1.5387	-0.018663	1
0.2666	1.51	1.531	-0.020961	1
0.2833	1.5	1.5233	-0.023253	1
0.3	1.49	1.5156	-0.025583	1
0.3166	1.48	1.508	-0.027997	1
0.3333	1.47	1.5004	-0.030404	1
0.4167	1.43	1.4631	-0.033053	1
0.5	1.39	1.4267	-0.036675	1
0.5833	1.35	1.3912	-0.041201	1
0.6667	1.32	1.3566	-0.036568	1
0.75	1.29	1.3228	-0.032837	1
0.8333	1.25	1.2899	-0.039946	1
0.9167	1.22	1.2578	-0.037833	1
1	1.2	1.2266	-0.026558	1
1.0833	1.17	1.1961	-0.02606	1
1.1667	1.14	1.1663	-0.026285	1
1.25	1.12	1.1373	-0.017286	1

## Mw33aso

1.3333	1.1	1.109	-0.0090075	1
1.4166	1.07	1.0814	-0.011432	1
1.5	1.05	1.0545	-0.004511	1
1.5833	1.03	1.0283	0.001709	1
1.6667	1.01	1.0027	0.0073074	1
1.75	0.99	0.97776	0.012239	1
1.8333	0.97	0.95345	0.016551	1
1.9167	0.95	0.92971	0.020286	1
2	0.93	0.9066	0.023403	1
2.5	0.83	0.77943	0.05057	1
.3	0.75	0.6701	0.079899	1

[illegible]



Gravel pack porosity..... 0  
 Effective well casing radius..... 0.0833  
 Effective wellbore radius..... 0.25  
 Log(Re/Rw)..... 3.543  
 Constants A, B and C..... 0.000 , 0.000, 2.297  
 No. of observations..... 69

=====

ANALYTICAL METHOD

Bouwer-Rice (Confined Aquifer Slug Test)

=====

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate	Std. Error
K =	2.6581E-004 +/-	7.7397E-006 ft/min
y0 =	6.7691E-001 +/-	5.2547E-003 ft

ANALYSIS OF MODEL RESIDUALS

residual = observed - calculated  
 weighted residual = residual \* weight

Weighted Residual Statistics:

Number of residuals..... 36  
 Number of estimated parameters.... 2  
 Degrees of freedom..... 34  
 Residual mean..... 0.0005759  
 Residual standard deviation..... 0.017

Residual variance..... 0.0002888

## Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.1833	0.66	0.6506	0.0093996	1
0.2	0.68	0.64826	0.031745	1
0.2166	0.67	0.64593	0.024068	1
0.2333	0.66	0.6436	0.016396	1
0.25	0.66	0.64128	0.018716	1
0.2666	0.65	0.63899	0.011014	1
0.2833	0.65	0.63668	0.013317	1
0.3	0.64	0.63439	0.0056122	1
0.3166	0.64	0.63211	0.0078853	1
0.3333	0.64	0.62984	0.010164	1
0.4167	0.62	0.61858	0.0014207	1
0.5	0.6	0.60754	-0.0075367	1
0.5833	0.59	0.59669	-0.0066913	1
0.6667	0.58	0.58603	-0.0060268	1
0.75	0.56	0.57557	-0.015565	1
0.8333	0.55	0.56529	-0.015291	1
0.9167	0.54	0.55519	-0.015187	1
1	0.53	0.54528	-0.015276	1
1.0833	0.52	0.53554	-0.015542	1
1.1667	0.51	0.52597	-0.015971	1
1.25	0.5	0.51658	-0.016582	1
1.3333	0.49	0.50736	-0.01736	1
1.4166	0.48	0.4983	-0.018303	1
1.5	0.48	0.4894	-0.0093967	1
1.5833	0.47	0.48066	-0.01066	1
1.6667	0.46	0.47207	-0.01207	1
1.75	0.45	0.46364	-0.013642	1



## Mw33bsi

1.8333	0.44	0.45537	-0.015366	1
1.9167	0.44	0.44723	-0.007227	1
2	0.43	0.43924	-0.0092434	1
2.5	0.39	0.39423	-0.0042298	1
3	0.36	0.35383	0.0061708	1
3.5	0.33	0.31757	0.012431	1
4	0.31	0.28502	0.024976	1
4.5	0.29	0.25582	0.034185	1
5	0.27	0.2296	0.040401	1

[illegible]

Version 2.0

14:11:49

11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041 1042 1043 1044

```
Data set..... MW33BSO.DAT
Output file..... MW33BSO.OUT
Data set title.... MW-33B SLUG OUT
Company..... GERAGHTY & MILLER, INC.
Project..... TF0320.015
Client..... SLOSS INDUSTRIES
Location..... BIRMINGHAM, ALABAMA
Test date..... 8/23/97
```

Length..... ft  
Time..... min

Initial displacement in well.....	0.84
Radius of well casing.....	0.0833
Radius of wellbore.....	0.25
Aquifer saturated thickness.....	33.33
Well screen length.....	10
Static height of water in well...	33.33

Gravel pack porosity..... 0  
 Effective well casing radius..... 0.0833  
 Effective wellbore radius..... 0.25  
 Log(Re/Rw)..... 3.543  
 Constants A, B and C..... 0.000 , 0.000, 2.297  
 No. of observations..... 56

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ANALYTICAL METHOD

Bouwer-Rice (Confined Aquifer Slug Test)

=====

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate	Std. Error
K =	4.6318E-004 +/-	1.0875E-005 ft/min
y0 =	5.9615E-001 +/-	4.3087E-003 ft

ANALYSIS OF MODEL RESIDUALS

residual = observed - calculated  
 weighted residual = residual \* weight

Weighted Residual Statistics:

Number of residuals..... 44  
 Number of estimated parameters.... 2  
 Degrees of freedom..... 42  
 Residual mean..... 0.0006397  
 Residual standard deviation..... 0.01614

Residual variance..... 0.0002606

## Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.05	0.64	0.58503	0.054975	1
0.0666	0.62	0.58138	0.038622	1
0.0833	0.61	0.57773	0.032269	1
0.1	0.59	0.57411	0.015893	1
0.1166	0.58	0.57053	0.0094729	1
0.1333	0.59	0.56695	0.023052	1
0.15	0.57	0.56339	0.0066079	1
0.1666	0.56	0.55988	0.00012079	1
0.1833	0.55	0.55637	-0.0063673	1
0.2	0.55	0.55288	-0.0028774	1
0.2166	0.54	0.54943	-0.00943	1
0.2333	0.53	0.54598	-0.015984	1
0.25	0.53	0.54256	-0.012559	1
0.2666	0.53	0.53918	-0.0091759	1
0.2833	0.52	0.53579	-0.015794	1
0.3	0.52	0.53243	-0.012433	1
0.3166	0.51	0.52911	-0.019113	1
0.3333	0.51	0.52579	-0.015794	1
0.4167	0.49	0.50953	-0.019528	1
0.5	0.48	0.49378	-0.013784	1
0.5833	0.46	0.47853	-0.018526	1
0.6667	0.45	0.46372	-0.013723	1
0.75	0.44	0.44939	-0.009394	1
0.8333	0.42	0.43551	-0.015508	1
0.9167	0.41	0.42204	-0.012035	1
1	0.4	0.40899	-0.0089945	1
1.0833	0.39	0.39636	-0.0063568	1

## RESULTS FROM VISUAL CURVE MATCHING

```

      Estimate
K   =  4.6318E-004 ft/min
y0  =  5.9615E-001 ft

```

[illegible]

SE1000B  
Environmental Logger  
12-Aug 8:46

~~P68~~ MW-345 (JH) 12/19/97

Unit# 331 Test# 3  
INPUT 1:00 Level (F) TOC  
Reference 6.44  
Scale factor 9.97  
Offset 0.03

Step# 0 10-Aug 15:27  
Step# 1 10-Aug 15:58

~~P68~~ MW-345

Time	Slug In	Slug Out
0	6.46	6.49
0.0033	6.46	6.64
0.0066	6.46	7.35
0.0099	6.47	6.86
0.0133	6.21	6.03
0.0166	5.83	5.87
0.02	5.92	8.17
0.0233	5.33	6.79
0.0266	4.97	6.21
0.03	4.29	7.15
0.0333	4.26	6.75
0.05	4.31	8.06
0.0666	4.97	8.52
0.0833	5.53	8.25
0.1	5.2	8.02
0.1166	5.21	7.87
0.1333	5.29	7.75
0.15	5.37	7.61
0.1666	5.44	7.56
0.1833	5.49	7.51
0.2	5.53	7.46
0.2166	5.55	7.41
0.2333	5.62	7.37
0.25	5.62	7.34
0.2666	5.64	7.3
0.2833	5.69	7.28
0.3	5.71	7.25
0.3166	5.75	7.23
0.3333	5.76	7.21
0.4167	5.79	7.13
0.5	5.87	7.07
0.5833	5.92	7.03
0.6667	5.94	7
0.75	5.97	6.97
0.8333	6.01	6.94
0.9167	6.04	6.92
1	6.06	6.9
1.0833	6.08	6.88
1.1667	6.09	6.87
1.25	6.11	6.85
1.3333	6.12	6.84
1.4166	6.14	6.83
1.5	6.15	6.82
1.5833	6.16	6.81

~~P68~~ MW-345

Time	Slug In	Slug Out
1.6667	6.16	6.8
1.75	6.18	6.79
1.8333	6.21	6.78
1.9167	6.19	6.78
2	6.2	6.77
2.5	6.23	6.74
3	6.25	6.72
3.5	6.28	6.69
4	6.29	6.67
4.5	6.31	6.66
5	6.32	6.65
5.5	6.32	6.64
6	6.33	6.63
6.5	6.34	6.62
7	6.36	6.61
7.5	6.36	6.61
8	6.37	6.6
8.5	6.38	6.59
9	6.38	6.59
9.5	6.38	6.58
10	6.38	6.58
11	6.4	6.57
12	6.41	6.56
13	6.41	6.55
14	6.42	6.55
15	6.43	6.55
16	6.43	6.54
17	6.43	6.54
18	6.44	6.53
19	6.44	6.53
20	6.45	6.53
21	6.45	6.53
22	6.45	6.52
23	6.45	6.52
24	6.46	6.52
25	6.46	6.52
26	6.46	6.51
27	6.46	6.51
28	6.46	6.51
29	6.46	6.51
30	6.46	6.51
31	6.46	6.51
32		6.51
33		6.51

~~P68~~ MW-345

Time	Slug In	Slug Out
34		6.51
35		6.51
36		6.5
37		6.5
38		6.5
39		6.5
40		6.5
41		6.5
42		6.5
43		6.5
44		6.5
45		6.5

SE1000B  
Environmental Logger  
17-Oct

8:19

P-6D RW-34D

2/19/97

Unit# 331 Test# 3

INPUT 1:00 Level (F) TOC

Reference 12.73  
Scale factor 9.97  
Offset 0.03

Step# 0 14-Oct 8:39  
Step# 1 14-Oct 11:57

RW-34D

P-6D

Time	Slug In	Slug Out
0	12.72	11.57
0.0033	12.72	11.57
0.0066	12.72	11.93
0.0099	12.72	13.24
0.0133	12.71	13.56
0.0166	12.7	13.25
0.02		13.46
0.0233	12.24	12.72
0.0266	11.07	12.76
0.03	11.41	12.51
0.0333	11.58	12.66
0.05	11.66	12.72
0.0666	11.61	12.73
0.0833	11.59	12.72
0.1	11.57	12.71
0.1166	11.59	12.7
0.1333	11.64	12.63
0.15	11.61	12.7
0.1666	11.64	12.69
0.1833	11.61	12.69
0.2	11.62	12.69
0.2166	11.62	12.69
0.2333	11.62	12.69
0.25	11.62	12.69
0.2666	11.62	12.69
0.2833	11.62	12.69
0.3	11.62	12.69
0.3166	11.62	12.68
0.3333	11.62	12.68
0.4167	11.62	12.68
0.5	11.62	12.68
0.5833	11.62	12.68
0.6667	11.63	12.68
0.75	11.62	12.68
0.8333	11.62	12.68
0.9167	11.62	12.68
1	11.62	12.68
1.0833	11.62	12.68
1.1667	11.62	12.68
1.25	11.62	12.68
1.3333	11.62	12.68
1.4166	11.62	12.68
1.5	11.62	12.68

RW-34D

P-6D

Time	Slug In	Slug Out
1.5833	11.62	12.68
1.6667	11.62	12.68
1.75	11.62	12.68
1.8333	11.62	12.68
1.9167	11.62	12.68
2	11.62	12.68
2.5	11.62	12.67
3	11.62	12.67
3.5	11.62	12.67
4	11.62	12.67
4.5	11.62	12.67
5	11.62	12.67
5.5	11.62	12.67
6	11.62	12.67
6.5	11.62	12.67
7	11.62	12.67
7.5	11.62	12.67
8	11.62	12.67
8.5	11.62	12.67
9	11.62	12.67
9.5	11.62	12.67
10	11.62	12.67
12	11.62	12.67
14	11.62	12.67
16	11.62	12.67
18	11.62	12.67
20	11.62	12.67
22	11.62	12.67
24	11.62	12.67
26	11.62	12.67
28	11.61	12.67
30	11.61	12.67
32	11.61	12.67
34	11.61	12.67
36	11.61	12.66
38	11.61	12.67
40	11.61	12.66
42	11.61	12.66
44	11.61	12.66
46	11.61	12.66
48	11.61	12.66
50	11.61	12.66
52	11.61	12.66

RW-34D

P-6D

Time	Slug In	Slug Out
54	11.61	12.66
56	11.61	12.66
58	11.61	12.66
60	11.61	12.66
62	11.6	12.66
64	11.6	12.66
66	11.6	12.66
68	11.6	12.66
70	11.6	12.65
72	11.6	12.66
74	11.6	12.66
76	11.6	12.66
78	11.6	12.66
80	11.6	12.6
82	11.6	12.65
84	11.6	12.65
86	11.6	12.65
88	11.6	12.65
90	11.6	12.65
92	11.6	12.65
94	11.6	12.65
96	11.6	12.65
98	11.6	12.65
100	11.59	12.65
110	11.59	12.64
120	11.59	12.64
130	11.58	12.64
140	11.58	12.64
150	11.58	12.63
160	11.58	12.63
170	11.58	12.63
180	11.58	12.63
190	11.57	12.62
200		12.62
210		12.62
220		12.61
230		12.61
240		12.61





Gravel pack porosity..... 0  
 Effective well casing radius..... 0.0833  
 Effective wellbore radius..... 0.25  
 Log(Re/Rw)..... 3.365  
 Constants A, B and C..... 0.000 , 0.000, 2.297  
 No. of observations..... 200

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ANALYTICAL METHOD

Bouwer-Rice (Confined Aquifer Slug Test)

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RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate	Std. Error
K =	2.0390E-007 +/-	4.4986E-009 ft/min
y0 =	1.0107E+000 +/-	3.1608E-004 ft

ANALYSIS OF MODEL RESIDUALS

residual = observed - calculated  
 weighted residual = residual \* weight

Weighted Residual Statistics:

Number of residuals..... 194  
 Number of estimated parameters.... 2  
 Degrees of freedom..... 192  
 Residual mean..... -2.936E-009  
 Residual standard deviation..... 0.002718

Residual variance..... 7.39E-006

## Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.1666	1.01	1.0107	-0.00065113	1
0.1833	1.01	1.0106	-0.00064819	1
0.2	1.01	1.0106	-0.00064524	1
0.2166	1.01	1.0106	-0.00064231	1
0.2333	1.01	1.0106	-0.00063936	1
0.25	1.01	1.0106	-0.00063641	1
0.2666	1.01	1.0106	-0.00063348	1
0.2833	1.01	1.0106	-0.00063054	1
0.3	1.01	1.0106	-0.00062759	1
0.3166	1.01	1.0106	-0.00062466	1
0.3333	1.01	1.0106	-0.00062171	1
0.4167	1.01	1.0106	-0.00060699	1
0.5	1.01	1.0106	-0.00059229	1
0.5833	1.01	1.0106	-0.00057759	1
0.6667	1.01	1.0106	-0.00056287	1
0.75	1.01	1.0105	-0.00054817	1
0.8333	1.01	1.0105	-0.00053346	1
0.9167	1.01	1.0105	-0.00051875	1
1	1.01	1.0105	-0.00050405	1
1.0833	1.01	1.0105	-0.00048934	1
1.1667	1.01	1.0105	-0.00047463	1
1.25	1.01	1.0105	-0.00045993	1
1.3333	1.01	1.0104	-0.00044523	1
1.4166	1.01	1.0104	-0.00043053	1
1.5	1.01	1.0104	-0.00041581	1
1.5833	1.01	1.0104	-0.00040111	1
1.6667	1.01	1.0104	-0.00038639	1

## Mw35aqsi

1.75	1.01	1.0104	-0.00037169	1
1.8333	1.01	1.0104	-0.00035699	1
1.9167	1.01	1.0103	-0.00034228	1
2	1.01	1.0103	-0.00032758	1
2.5	1.01	1.0102	-0.00023936	1
3	1.01	1.0102	-0.00015115	1
3.5	1.01	1.0101	-6.294E-005	1
4	1.01	1.01	2.5258E-005	1
4.5	1.01	1.0099	0.00011345	1
5	1.01	1.0098	0.00020163	1
5.5	1.01	1.0097	0.00028981	1
6	1.01	1.0096	0.00037797	1
6.5	1.01	1.0095	0.00046613	1
7	1.01	1.0094	0.00055428	1
7.5	1.01	1.0094	0.00064243	1
8	1.01	1.0093	0.00073056	1
8.5	1.01	1.0092	0.00081869	1
9	1.01	1.0091	0.00090681	1
9.5	1.01	1.009	0.00099493	1
10	1.01	1.0089	0.001083	1
11	1.01	1.0087	0.0012592	1
12	1.01	1.0086	0.0014354	1
13	1.01	1.0084	0.0016115	1
14	1.01	1.0082	0.0017876	1
15	1.01	1.008	0.0019637	1
16	1.01	1.0079	0.0021397	1
17	1.01	1.0077	0.0023157	1
18	1.01	1.0075	0.0024917	1
19	1.01	1.0073	0.0026676	1
20	1.01	1.0072	0.0028435	1
21	1.01	1.007	0.0030194	1
22	1.01	1.0068	0.0031953	1
23	1.01	1.0066	0.0033711	1
24	1.01	1.0065	0.0035469	1

25	1.01	1.0063	0.0037226	1
26	1.01	1.0061	0.0038984	1
27	1.01	1.0059	0.0040741	1
28	1.01	1.0058	0.0042497	1
29	1	1.0056	-0.0055746	1
30	1	1.0054	-0.005399	1
31	1.01	1.0052	0.0047765	1
32	1.01	1.005	0.0049521	1
33	1	1.0049	-0.0048724	1
34	1	1.0047	-0.0046969	1
35	1	1.0045	-0.0045215	1
36	1	1.0043	-0.0043461	1
37	1	1.0042	-0.0041707	1
38	1	1.004	-0.0039953	1
39	1	1.0038	-0.00382	1
40	1	1.0036	-0.0036447	1
41	1	1.0035	-0.0034694	1
42	1	1.0033	-0.0032942	1
43	1	1.0031	-0.003119	1
44	1	1.0029	-0.0029438	1
45	1	1.0028	-0.0027687	1
46	1	1.0026	-0.0025935	1
47	1	1.0024	-0.0024185	1
48	1	1.0022	-0.0022434	1
49	1	1.0021	-0.0020684	1
50	1	1.0019	-0.0018934	1
51	1	1.0017	-0.0017184	1
52	1	1.0015	-0.0015435	1
53	1	1.0014	-0.0013686	1
54	1	1.0012	-0.0011937	1
55	1	1.001	-0.0010189	1
56	1	1.0008	-0.00084408	1
57	1	1.0007	-0.0006693	1
58	1	1.0005	-0.00049455	1

## Mw35aqsi

59	1	1.0003	-0.00031983	1
60	1	1.0001	-0.00014515	1
61	1	0.99997	2.9509E-005	1
62	1	0.9998	0.00020413	1
63	1	0.99962	0.00037873	1
64	1	0.99945	0.00055329	1
65	1	0.99927	0.00072783	1
66	1	0.9991	0.00090233	1
67	1	0.99892	0.0010768	1
68	1	0.99875	0.0012512	1
69	1	0.99857	0.0014257	1
70	1	0.9984	0.0016	1
71	1	0.99823	0.0017744	1
72	1	0.99805	0.0019487	1
73	1	0.99788	0.002123	1
74	1	0.9977	0.0022973	1
75	1	0.99753	0.0024715	1
76	1	0.99735	0.0026457	1
77	1	0.99718	0.0028199	1
78	1	0.99701	0.002994	1
79	1	0.99683	0.0031681	1
80	1	0.99666	0.0033422	1
81	1	0.99648	0.0035162	1
82	1	0.99631	0.0036903	1
83	1	0.99614	0.0038642	1
84	1	0.99596	0.0040382	1
85	1	0.99579	0.0042121	1
86	1	0.99561	0.004386	1
87	1	0.99544	0.0045599	1
88	1	0.99527	0.0047337	1
89	1	0.99509	0.0049075	1
90	1	0.99492	0.0050813	1
91	0.99	0.99474	-0.004745	1
92	0.99	0.99457	-0.0045712	1

93	0.99	0.9944	-0.0043976	1
94	0.99	0.99422	-0.0042239	1
95	0.99	0.99405	-0.0040503	1
96	0.99	0.99388	-0.0038767	1
97	0.99	0.9937	-0.0037031	1
98	0.99	0.99353	-0.0035296	1
99	0.99	0.99336	-0.0033561	1
100	0.99	0.99318	-0.0031826	1
101	0.99	0.99301	-0.0030092	1
102	0.99	0.99284	-0.0028358	1
103	0.99	0.99266	-0.0026624	1
104	0.99	0.99249	-0.0024891	1
105	0.99	0.99232	-0.0023157	1
106	0.99	0.99214	-0.0021424	1
107	0.99	0.99197	-0.0019692	1
108	0.99	0.9918	-0.001796	1
109	0.99	0.99162	-0.0016228	1
110	0.99	0.99145	-0.0014496	1
111	0.99	0.99128	-0.0012765	1
112	0.99	0.9911	-0.0011033	1
113	0.99	0.99093	-0.00093027	1
114	0.99	0.99076	-0.00075722	1
115	0.99	0.99058	-0.00058421	1
116	0.99	0.99041	-0.00041122	1
117	0.99	0.99024	-0.00023826	1
118	0.99	0.99007	-6.5338E-005	1
119	0.99	0.98989	0.00010756	1
120	0.99	0.98972	0.00028042	1
121	0.99	0.98955	0.00045326	1
122	0.99	0.98937	0.00062607	1
123	0.99	0.9892	0.00079884	1
124	0.99	0.98903	0.00097159	1
125	0.99	0.98886	0.0011443	1
126	0.99	0.98868	0.001317	1

127	0.99	0.98851	0.0014896	1
128	0.99	0.98834	0.0016623	1
129	0.99	0.98817	0.0018349	1
130	0.99	0.98799	0.0020074	1
131	0.99	0.98782	0.00218	1
132	0.99	0.98765	0.0023525	1
133	0.99	0.98748	0.0025249	1
134	0.99	0.9873	0.0026974	1
135	0.99	0.98713	0.0028698	1
136	0.99	0.98696	0.0030422	1
137	0.99	0.98679	0.0032145	1
138	0.99	0.98661	0.0033869	1
139	0.99	0.98644	0.0035591	1
140	0.99	0.98627	0.0037314	1
141	0.99	0.9861	0.0039036	1
142	0.99	0.98592	0.0040758	1
143	0.99	0.98575	0.004248	1
144	0.99	0.98558	0.0044202	1
145	0.98	0.98541	-0.0054077	1
146	0.98	0.98524	-0.0052356	1
147	0.99	0.98506	0.0049364	1
148	0.99	0.98489	0.0051084	1
149	0.98	0.98472	-0.0047196	1
150	0.98	0.98455	-0.0045476	1
151	0.98	0.98438	-0.0043757	1
152	0.98	0.9842	-0.0042038	1
153	0.98	0.98403	-0.0040319	1
154	0.98	0.98386	-0.0038601	1
155	0.98	0.98369	-0.0036883	1
156	0.98	0.98352	-0.0035165	1
157	0.98	0.98334	-0.0033447	1

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RESULTS FROM VISUAL CURVE MATCHING

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[illegible]



## A Q T E S O L V      R E S U L T S

Version 2.0

Developed by Glenn M. Duffield  
(c) 1993, 1994 Geraghty & Miller, Inc.

10/24/97

17:05:34

## TEST DESCRIPTION

```
Data set..... MW35SO.DAT
Output file..... MW35SO.OUT
Data set title.... MW-35A SLUG OUT
Company..... GERAGHTY & MILLER, INC.
Project..... TF0320.015
Client..... SLOSS INDUSTRIES
Location..... BIRMINGHAM, ALABAMA
Test date..... 9/04/97
```

## Units of Measurement

Length..... ft  
Time..... min

## Test Well Data

Initial displacement in well.....	2.3
Radius of well casing.....	0.0833
Radius of wellbore.....	0.25
Aquifer saturated thickness.....	24.58
Well screen length.....	10
Static height of water in well...	24.58

Gravel pack porosity..... 0  
 Effective well casing radius..... 0.0833  
 Effective wellbore radius..... 0.25  
 Log(Re/Rw)..... 3.365  
 Constants A, B and C..... 0.000 , 0.000, 2.297  
 No. of observations..... 200

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ANALYTICAL METHOD

Bouwer-Rice (Confined Aquifer Slug Test)

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RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate	Std. Error
K =	7.9213E-008 +/-	1.3926E-008 ft/min
y0 =	9.7761E-001 +/-	8.8735E-004 ft

ANALYSIS OF MODEL RESIDUALS

residual = observed - calculated  
 weighted residual = residual \* weight

Weighted Residual Statistics:

Number of residuals..... 191  
 Number of estimated parameters.... 2  
 Degrees of freedom..... 189  
 Residual mean..... 1.544E-008  
 Residual standard deviation..... 0.007799

Residual variance..... 6.083E-005

## Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0833	1.05	0.9776	0.072396	1
0.1	1.03	0.9776	0.052397	1
0.1166	0.98	0.9776	0.0023977	1
0.1333	0.97	0.9776	-0.0076012	1
0.15	0.98	0.9776	0.0023999	1
0.1666	0.99	0.9776	0.012401	1
0.1833	0.99	0.9776	0.012402	1
0.2	0.98	0.9776	0.0024033	1
0.2166	0.98	0.9776	0.0024044	1
0.2333	0.98	0.97759	0.0024055	1
0.25	0.98	0.97759	0.0024066	1
0.2666	0.98	0.97759	0.0024077	1
0.2833	0.98	0.97759	0.0024088	1
0.3	0.98	0.97759	0.0024099	1
0.3166	0.98	0.97759	0.002411	1
0.3333	0.98	0.97759	0.0024121	1
0.4167	0.98	0.97758	0.0024176	1
0.5	0.98	0.97758	0.0024231	1
0.5833	0.98	0.97757	0.0024287	1
0.6667	0.98	0.97757	0.0024342	1
0.75	0.98	0.97756	0.0024397	1
0.8333	0.98	0.97755	0.0024453	1
0.9167	0.98	0.97755	0.0024508	1
1	0.98	0.97754	0.0024563	1
1.0833	0.98	0.97754	0.0024618	1
1.1667	0.98	0.97753	0.0024674	1
1.25	0.98	0.97753	0.0024729	1

1.3333	0.98	0.97752	0.0024784	1
1.4166	0.98	0.97752	0.0024839	1
1.5	0.98	0.97751	0.0024895	1
1.5833	0.98	0.97751	0.002495	1
1.6667	0.98	0.9775	0.0025005	1
1.75	0.98	0.97749	0.0025061	1
1.8333	0.98	0.97749	0.0025116	1
1.9167	0.98	0.97748	0.0025171	1
2	0.98	0.97748	0.0025226	1
2.5	0.98	0.97744	0.0025558	1
3	0.98	0.97741	0.0025889	1
3.5	0.98	0.97738	0.0026221	1
4	0.98	0.97734	0.0026553	1
4.5	0.98	0.97731	0.0026884	1
5	0.98	0.97728	0.0027216	1
5.5	0.98	0.97725	0.0027547	1
6	0.98	0.97721	0.0027879	1
6.5	0.98	0.97718	0.002821	1
7	0.98	0.97715	0.0028542	1
7.5	0.98	0.97711	0.0028873	1
8	0.98	0.97708	0.0029205	1
8.5	0.98	0.97705	0.0029536	1
9	0.97	0.97701	-0.0070133	1
9.5	0.97	0.97698	-0.0069801	1
10	0.97	0.97695	-0.006947	1
11	0.98	0.97688	0.0031193	1
12	0.97	0.97681	-0.0068144	1
13	0.97	0.97675	-0.0067481	1
14	0.97	0.97668	-0.0066819	1
15	0.97	0.97662	-0.0066156	1
16	0.97	0.97655	-0.0065494	1
17	0.97	0.97648	-0.0064831	1
18	0.97	0.97642	-0.0064169	1
19	0.97	0.97635	-0.0063506	1

20	0.97	0.97628	-0.0062844	1
21	0.97	0.97622	-0.0062181	1
22	0.97	0.97615	-0.0061519	1
23	0.97	0.97609	-0.0060857	1
24	0.97	0.97602	-0.0060195	1
25	0.97	0.97595	-0.0059532	1
26	0.97	0.97589	-0.005887	1
27	0.97	0.97582	-0.0058208	1
28	0.97	0.97575	-0.0057546	1
29	0.97	0.97569	-0.0056884	1
30	0.97	0.97562	-0.0056222	1
31	0.97	0.97556	-0.005556	1
32	0.97	0.97549	-0.0054898	1
33	0.97	0.97542	-0.0054237	1
34	0.97	0.97536	-0.0053575	1
35	0.97	0.97529	-0.0052913	1
36	0.97	0.97523	-0.0052251	1
37	0.97	0.97516	-0.005159	1
38	0.97	0.97509	-0.0050928	1
39	0.97	0.97503	-0.0050267	1
40	0.97	0.97496	-0.0049605	1
41	0.97	0.97489	-0.0048944	1
42	0.97	0.97483	-0.0048282	1
43	0.97	0.97476	-0.0047621	1
44	0.97	0.9747	-0.004696	1
45	0.97	0.97463	-0.0046298	1
46	0.97	0.97456	-0.0045637	1
47	0.97	0.9745	-0.0044976	1
48	0.97	0.97443	-0.0044315	1
49	0.97	0.97437	-0.0043654	1
50	0.97	0.9743	-0.0042993	1
51	0.97	0.97423	-0.0042332	1
52	0.97	0.97417	-0.0041671	1
53	0.97	0.9741	-0.004101	1

54	0.97	0.97403	-0.0040349	1
55	0.97	0.97397	-0.0039688	1
56	0.97	0.9739	-0.0039027	1
57	0.97	0.97384	-0.0038367	1
58	0.97	0.97377	-0.0037706	1
59	0.97	0.9737	-0.0037045	1
60	0.97	0.97364	-0.0036385	1
61	0.97	0.97357	-0.0035724	1
62	0.97	0.97351	-0.0035064	1
63	0.97	0.97344	-0.0034403	1
64	0.97	0.97337	-0.0033743	1
65	0.97	0.97331	-0.0033082	1
66	0.97	0.97324	-0.0032422	1
67	0.97	0.97318	-0.0031762	1
68	0.97	0.97311	-0.0031101	1
69	0.97	0.97304	-0.0030441	1
70	0.97	0.97298	-0.0029781	1
71	0.97	0.97291	-0.0029121	1
72	0.97	0.97285	-0.0028461	1
73	0.97	0.97278	-0.0027801	1
74	0.97	0.97271	-0.0027141	1
75	0.97	0.97265	-0.0026481	1
76	0.97	0.97258	-0.0025821	1
77	0.97	0.97252	-0.0025161	1
78	0.97	0.97245	-0.0024502	1
79	0.97	0.97238	-0.0023842	1
80	0.97	0.97232	-0.0023182	1
81	0.97	0.97225	-0.0022522	1
82	0.97	0.97219	-0.0021863	1
83	0.97	0.97212	-0.0021203	1
84	0.97	0.97205	-0.0020544	1
85	0.97	0.97199	-0.0019884	1
86	0.97	0.97192	-0.0019225	1
87	0.97	0.97186	-0.0018565	1

88	0.97	0.97179	-0.0017906	1
89	0.97	0.97172	-0.0017247	1
90	0.97	0.97166	-0.0016587	1
91	0.97	0.97159	-0.0015928	1
92	0.97	0.97153	-0.0015269	1
93	0.97	0.97146	-0.001461	1
94	0.97	0.9714	-0.0013951	1
95	0.97	0.97133	-0.0013292	1
96	0.97	0.97126	-0.0012633	1
97	0.97	0.9712	-0.0011974	1
98	0.97	0.97113	-0.0011315	1
99	0.97	0.97107	-0.0010656	1
100	0.97	0.971	-0.00099973	1
101	0.97	0.97093	-0.00093386	1
102	0.97	0.97087	-0.00086799	1
103	0.97	0.9708	-0.00080212	1
104	0.97	0.97074	-0.00073625	1
105	0.97	0.97067	-0.0006704	1
106	0.97	0.9706	-0.00060454	1
107	0.97	0.97054	-0.00053869	1
108	0.97	0.97047	-0.00047285	1
109	0.97	0.97041	-0.00040701	1
110	0.97	0.97034	-0.00034117	1
111	0.97	0.97028	-0.00027534	1
112	0.97	0.97021	-0.00020951	1
113	0.97	0.97014	-0.00014369	1
114	0.97	0.97008	-7.7869E-005	1
115	0.97	0.97001	-1.2055E-005	1
116	0.97	0.96995	5.3755E-005	1
117	0.97	0.96988	0.00011956	1
118	0.97	0.96981	0.00018536	1
119	0.97	0.96975	0.00025116	1
120	0.97	0.96968	0.00031695	1
121	0.97	0.96962	0.00038274	1

122	0.97	0.96955	0.00044852	1
123	0.97	0.96949	0.0005143	1
124	0.97	0.96942	0.00058007	1
125	0.97	0.96935	0.00064584	1
126	0.97	0.96929	0.0007116	1
127	0.98	0.96922	0.010777	1
128	0.97	0.96916	0.00084312	1
129	0.97	0.96909	0.00090887	1
130	0.98	0.96903	0.010975	1
131	0.97	0.96896	0.0010404	1
132	0.97	0.96889	0.0011061	1
133	0.97	0.96883	0.0011718	1
134	0.98	0.96876	0.011238	1
135	0.98	0.9687	0.011303	1
136	0.98	0.96863	0.011369	1
137	0.97	0.96857	0.0014347	1
138	0.97	0.9685	0.0015004	1
139	0.97	0.96843	0.0015661	1
140	0.97	0.96837	0.0016318	1
141	0.97	0.9683	0.0016975	1
142	0.98	0.96824	0.011763	1
143	0.98	0.96817	0.011829	1
144	0.97	0.96811	0.0018946	1
145	0.97	0.96804	0.0019603	1
146	0.97	0.96797	0.002026	1
147	0.97	0.96791	0.0020916	1
148	0.98	0.96784	0.012157	1
149	0.97	0.96778	0.002223	1

=====

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES



[illegible]

SE1000B  
Environmental Logger

17-Oct 11:27

~~P-5~~ MW-36 ~~34~~ 12/19/97

Unit# 331 Test# 1  
INPUT 1:00 Level (F) TOC  
Reference 2.5  
Scale factor 9.97  
Offset 0.03  
Step# 0 10-Oct 15:00  
Step# 1 10-Oct 15:13

<del>P-5</del> MW-36			<del>P-5</del> MW-36		
Time	Slug In	Slug Out	Time	Slug In	Slug Out
0	2.36	2.12	1.75	1.96	2.23
0.0033	2.36	2.09	1.8333	1.98	2.21
0.0066	2.36	2.1	1.9167	1.99	2.2
0.0099	2.36	2.11	2	2.01	2.18
0.0133	2.36	2.45	2.5	2.07	2.11
0.0166	2.32	2.02	3	2.11	2.07
0.02	2.31	3.54	3.5	2.13	2.04
0.0233	2.35	4.27	4	2.14	2.01
0.0266	2.3	4.89	4.5	2.15	1.99
0.03	2.36	4.84	5	2.15	1.98
0.0333	2.24	5.25	5.5	2.15	1.96
0.05	2.18	4.9	6	2.15	1.95
0.0666	2.05	4.22	6.5	2.15	1.93
0.0833	1.53	4.26	7	2.15	1.92
0.1	1.3	4.14	7.5	2.14	1.92
0.1166	1.15	4.06	8	2.14	1.91
0.1333	1.04	4.04	8.5	2.14	1.9
0.15	0.69	3.95	9	2.14	1.9
0.1666	0.45	3.96	9.5	2.14	1.89
0.1833	0.03	3.89	10	2.14	1.88
0.2	0.12	3.82	11	2.15	1.87
0.2166	0.2	3.72	12	2.14	1.86
0.2333	0.29	3.67	13		1.86
0.25	0.37	3.61	14		1.85
0.2666	0.44	3.55	15		1.84
0.2833	0.51	3.5	16		1.85
0.3	0.57	3.46	17		1.84
0.3166	0.64	3.41	18		1.84
0.3333	0.69	3.37	19		1.83
0.4167	0.94	3.2	20		1.81
0.5	1.12	3.07	21		1.81
0.5833	1.26	2.94	22		1.81
0.6667	1.37	2.83			
0.75	1.46	2.69			
0.8333	1.54	2.6			
0.9167	1.61	2.55			
1	1.67	2.5			
1.0833	1.71	2.45			
1.1667	1.75	2.41			
1.25	1.8	2.38			
1.3333	1.83	2.34			
1.4166	1.86	2.32			
1.5	1.89	2.29			
1.5833	1.91	2.27			
1.6667	1.94	2.25			

Initial displacement in well.....	2.62
Radius of well casing.....	0.0833
Radius of wellbore.....	0.25
Aquifer saturated thickness.....	26.41
Well screen length.....	10
Static height of water in well...	26.41

Gravel pack porosity..... 0  
 Effective well casing radius..... 0.0833  
 Effective wellbore radius..... 0.25  
 Log(Re/Rw)..... 3.408  
 Constants A, B and C..... 0.000 , 0.000, 2.297  
 No. of observations..... 34

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ANALYTICAL METHOD

Bouwer-Rice (Confined Aquifer Slug Test)

=====

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate	Std. Error
K =	4.3995E-003 +/-	2.2436E-005 ft/min
y0 =	2.6930E+000 +/-	9.1606E-003 ft

ANALYSIS OF MODEL RESIDUALS

residual = observed - calculated  
 weighted residual = residual \* weight

Weighted Residual Statistics:

Number of residuals..... 20  
 Number of estimated parameters.... 2  
 Degrees of freedom..... 18  
 Residual mean..... -0.0009125  
 Residual standard deviation..... 0.009221

Residual variance..... 8.502E-005

## Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0666	2.09	2.1019	-0.011863	1
0.0833	1.97	1.9752	-0.0052147	1
0.1	1.85	1.8562	-0.006198	1
0.1166	1.74	1.745	-0.0050019	1
0.1333	1.64	1.6399	0.00014339	1
0.15	1.55	1.541	0.0089531	1
0.1666	1.46	1.4487	0.01127	1
0.1833	1.37	1.3614	0.0085633	1
0.2	1.29	1.2794	0.010597	1
0.2166	1.21	1.2028	0.0072399	1
0.2333	1.13	1.1303	-0.0002877	1
0.25	1.07	1.0622	0.0078179	1
0.2666	1	0.99855	0.0014482	1
0.2833	0.94	0.93838	0.0016161	1
0.3	0.88	0.88184	-0.0018415	1
0.3166	0.83	0.82901	0.00098546	1
0.3333	0.78	0.77906	0.0009378	1
0.4167	0.56	0.57119	-0.011194	1
0.5	0.4	0.41894	-0.018945	1
0.5833	0.29	0.30728	-0.017277	1

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RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

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      Estimate
K   =  4.3995E-003  ft/min
y0  =  2.6930E+000  ft

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[illegible]

A Q T E S O L V      R E S U L T S  
Version 2.0

10/24/97

17:11:09

## TEST DESCRIPTION

```
Data set..... MW37SO.DAT
Output file..... MW37SO.OUT
Data set title.... MW-37 SLUG OUT
Company..... GERAGHTY & MILLER, INC.
Project..... TF0320.015
Client..... SLOSS INDUSTRIES
Location..... BIRMINGHAM, ALABAMA
Test date..... 8/16/97
```

## Units of Measurement

Length..... ft  
Time..... min

## Test Well Data

Initial displacement in well.....	2.51
Radius of well casing.....	0.0833
Radius of wellbore.....	0.25
Aquifer saturated thickness.....	26.41
Well screen length.....	10
Static height of water in well...	26.41

Gravel pack porosity..... 0  
 Effective well casing radius..... 0.0833  
 Effective wellbore radius..... 0.25  
 Log(Re/Rw)..... 3.408  
 Constants A, B and C..... 0.000 , 0.000, 2.297  
 No. of observations..... 43

=====

ANALYTICAL METHOD

Bouwer-Rice (Confined Aquifer Slug Test)

=====

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate	Std. Error
K =	4.2232E-003 +/-	2.2863E-005 ft/min
y0 =	2.5246E+000 +/-	5.4013E-003 ft

ANALYSIS OF MODEL RESIDUALS

residual = observed - calculated

weighted residual = residual \* weight

Weighted Residual Statistics:

Number of residuals..... 35  
 Number of estimated parameters.... 2  
 Degrees of freedom..... 33  
 Residual mean..... -0.0002142  
 Residual standard deviation..... 0.01607



Residual variance..... 0.0002583

## Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0033	2.51	2.495	0.014984	1
0.0066	2.47	2.4658	0.0042232	1
0.0099	2.44	2.4369	0.0031197	1
0.0133	2.41	2.4075	0.0025378	1
0.0166	2.45	2.3792	0.070751	1
0.02	2.36	2.3505	0.0094733	1
0.0233	2.31	2.323	-0.012981	1
0.0266	2.27	2.2958	-0.025758	1
0.03	2.25	2.268	-0.018043	1
0.0333	2.22	2.2415	-0.021464	1
0.05	2.1	2.1117	-0.011658	1
0.0666	1.97	1.9901	-0.02008	1
0.0833	1.86	1.8748	-0.014832	1
0.1	1.76	1.7663	-0.0062585	1
0.1166	1.66	1.6646	-0.0045669	1
0.1333	1.56	1.5682	-0.0081698	1
0.15	1.48	1.4774	0.0026447	1
0.1666	1.39	1.3923	-0.0022971	1
0.1833	1.31	1.3117	-0.0016675	1
0.2	1.24	1.2357	0.0042927	1
0.2166	1.17	1.1646	0.005438	1
0.2333	1.1	1.0971	0.0028792	1
0.25	1.04	1.0336	0.0064148	1
0.2666	0.98	0.97408	0.005923	1
0.2833	0.93	0.91767	0.012333	1
0.3	0.87	0.86452	0.0054762	1
0.3166	0.82	0.81475	0.0052508	1

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11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532
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      Estimate
K   =  4.2232E-003 ft/min
y0  =  2.5246E+000 ft

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[illegible]

**VOLUME I**  
**APPENDIX D**  
**SURVEY DATA**

3622,1302648.851360,715224.051341,569.020000,H+T3622  
3623,1302470.102840,715276.873673,541.710000,24-SL0002  
3624,1302498.730380,715209.036367,544.760000,24-SL0013  
3625,1302683.712280,715102.949085,551.790000,24-SL0014  
3626,1302722.854300,715313.444669,549.100000,24-SL0015  
3627,1302637.987300,715421.302386,538.830000,24-SL0016  
3628,1302861.280820,715152.769589,563.890000,H+T3628  
3629,1302365.324350,715568.680632,538.330000,24-SL0003  
3630,1302383.716100,715791.693897,554.220000,H+T3630  
3631,1302352.009480,715746.142387,547.050000,24-SM0001  
3632,1302252.222160,715804.540621,534.370000,24-SL0004  
3633,1302227.441090,715938.579913,534.020000,24-SL0005  
3634,1302371.436810,716046.097728,533.820000,24-SL0006  
3635,1302357.912220,715917.984712,543.740000,24-SM0002  
3636,1302534.273840,716078.238104,533.010000,24-SL0007  
3637,1302529.933970,715996.997423,536.320000,24-SM0003  
3638,1302832.587530,715743.699270,531.880000,24-SL0012  
3639,1302899.801740,715789.572259,530.740000,24-SL0011  
3640,1302988.965350,715983.816379,525.260000,24-SL0010  
3641,1302864.404830,716059.816096,529.700000,24-SL0009  
3642,1302739.097890,716084.202809,531.000000,24-SL0008  
3643,1302798.449560,715889.586353,534.740000,24-SM0004  
3644,1302936.611470,714899.432297,592.310000,H+T3644  
3645,1303197.025590,715194.168410,599.710000,23-SM0002  
3646,1303351.234470,715092.333971,613.940000,23-SM0001  
3647,1303001.133450,715070.167367,599.790000,23-SM0004  
3648,1303142.614670,714997.232731,597.610000,23-SM0003  
3649,1303072.376380,714977.980445,597.640000,H+T3649  
3650,1301771.198300,715799.902974,537.690000,H+T3650  
3651,1300831.192590,715330.589973,540.730000,SET RR SPIKE3651  
3652,1300382.474270,714892.189700,555.420000,39-SM0001  
3653,1300828.014130,715047.397809,546.150000,H+T3653  
3654,1300301.745890,714709.326824,573.580000,39-SM0002  
3655,1301135.360210,715306.655892,543.360000,H+T3655  
3656,1301311.535010,715451.620931,551.800000,39-SM0006  
3657,1301771.766950,715695.984882,537.240000,39-SM0005

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3658, 1302961.127740, 715049.331259, 585.506449, 23-36  
3659, 1302924.564430, 715014.984244, 579.460897, 23-37  
3660, 1302903.811260, 714971.943564, 584.507744, 23-38  
3661, 1302941.939280, 714931.233964, 590.954341, 23-39  
3662, 1302955.681750, 714922.016670, 592.340453, 23-1  
3663, 1303003.335530, 714932.684359, 594.216237, 23-2  
3664, 1303050.913350, 714946.843966, 595.872888, 23-3  
3665, 1303100.653960, 714948.965786, 598.561392, 23-4  
3666, 1303120.470470, 714907.429466, 608.731801, 23-5  
3667, 1303136.272530, 714908.453347, 610.597078, H+T3667  
3668, 1303151.434220, 714864.936695, 618.519530, 23-6  
3669, 1303181.891900, 714827.331225, 624.060331, 23-7  
3670, 1303209.668560, 714779.032572, 629.863452, 23-8  
3671, 1303222.324930, 714768.100524, 632.279025, H+T3671  
3672, 1303258.752650, 714790.432227, 631.180381, 23-9  
3673, 1303300.337030, 714818.737492, 631.993800, 23-10  
3674, 1303339.043180, 714851.580521, 632.263512, 23-11  
3675, 1303377.660000, 714883.828767, 632.626713, 23-12  
3676, 1303415.315970, 714915.354189, 633.597004, 23-13  
3677, 1303453.521920, 714947.157341, 634.082734, 23-14  
3678, 1303486.773260, 714983.852100, 633.484980, 23-15  
3679, 1303491.184780, 714991.109970, 633.537637, H+T3679  
3680, 1303507.165220, 715028.859288, 633.410450, 23-16  
3681, 1303505.250600, 715078.765509, 631.316458, 23-17  
3682, 1303501.190500, 715094.435728, 630.431847, H+T3682  
3683, 1303473.046640, 715117.325734, 628.342405, 23-18  
3684, 1303426.986720, 715136.579781, 625.343525, 23-19  
3685, 1303378.695100, 715154.650393, 621.920288, 23-20  
3686, 1303348.486000, 715160.196210, 621.530797, H+T3686  
3687, 1303342.375310, 715178.532926, 620.712668, 23-21  
3688, 1303340.347940, 715226.594887, 619.201003, 23-22  
3689, 1303332.580930, 715277.553714, 617.797962, 23-23  
3690, 1303298.030630, 715283.198570, 614.673464, H+T3690  
3691, 1303281.463850, 715280.295526, 613.434292, 23-24  
3692, 1303233.481170, 715273.981460, 609.399439, 23-25  
3693, 1303186.320760, 715246.581769, 606.322391, 23-26  
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July  
1997  
(3)

## SLOSS II.ASC

August 1997

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**VOLUME I**

**APPENDIX E**

**THREATENED AND/OR ENDANGERED SPECIES CORRESPONDENCE**

August 20, 1996

Ms. Jan Johnson, Science Information Manager  
Natural Heritage Program  
Alabama Department of Conservation  
and Natural Resources  
64 N. Union St., Room 421  
Montgomery, AL 36130

**Re: Threatened and Endangered Species Information**

Dear Ms. Johnson:

The purpose of this letter is to request the most recent information concerning the occurrence of threatened and/or endangered plant and animal species, any habitats of special concern, and/or environmentally sensitive areas at or in the vicinity (within a three mile radius) of the site indicated on the enclosed figure. If such areas exist at or in the vicinity of the site, but are not in a position to be potentially impacted by the site, please indicate this in your response.

The site location can be found on the USGA Topographical Quadrangle Birmingham, North Alabama map (see attached site location map). Geraghty & Miller, Inc. is preparing an environmental study of the site and your information will be included in the report summarizing this study.

Thank you for your attention to this matter. If you have any questions, please do not hesitate to contact me at (919) 571-1662.

Sincerely,

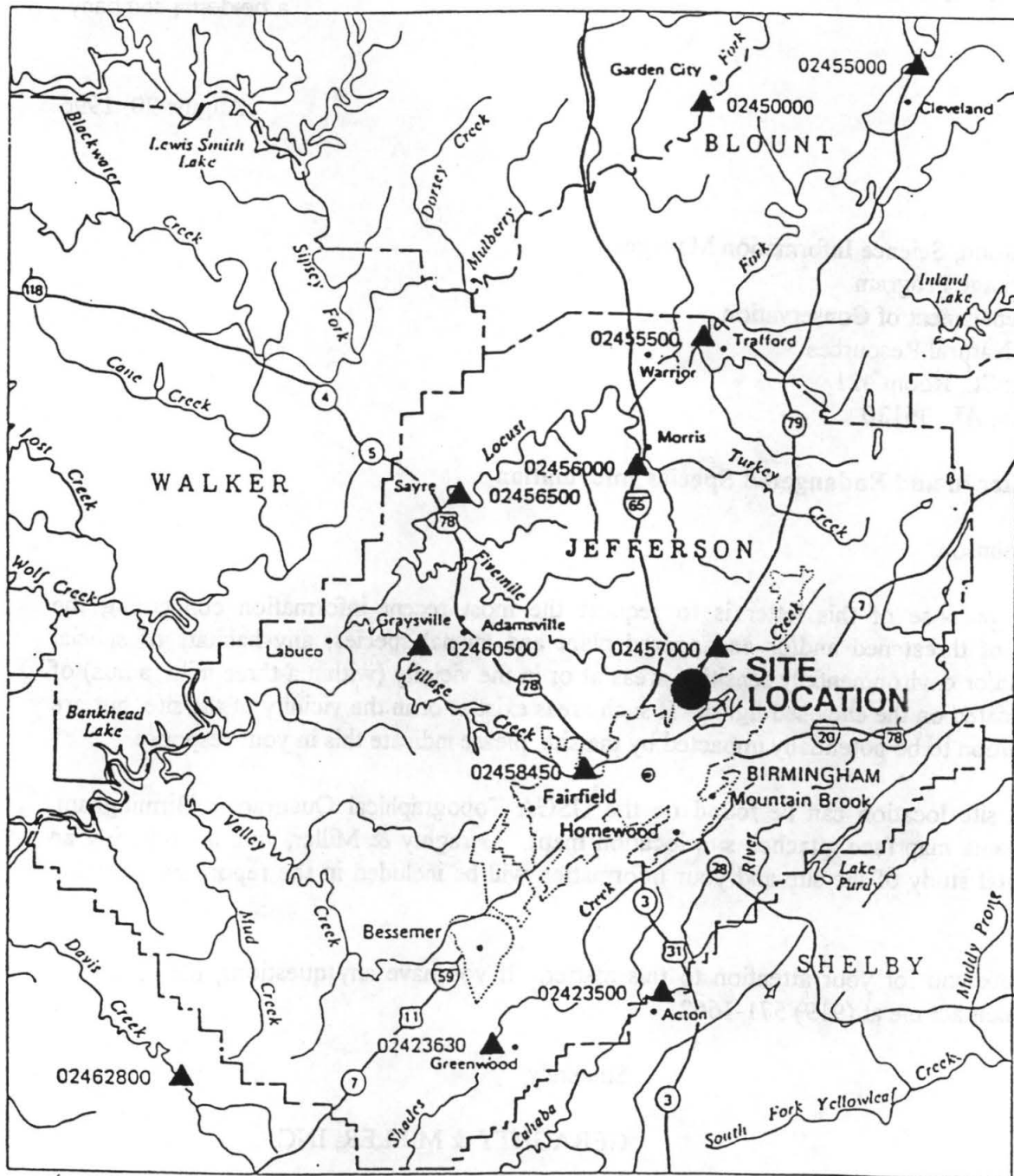
GERAGHTY & MILLER, INC.



Rob Drake  
Staff Scientist/Biologist

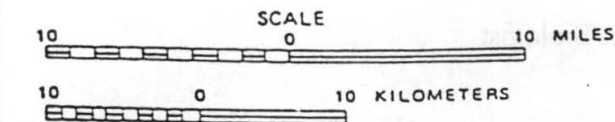
Enclosure





#### EXPLANATION

02462800 ▲ — CONTINUOUS RECORD  
GAGING STATION  
AND NUMBER



SOURCE: GEOLOGICAL SURVEY OF ALABAMA, ATLAS 16, 1980

**GERAGHTY  
& MILLER, INC.**  
Environmental Services

#### REGIONAL SURFACE WATER HYDROLOGY

FACILITY — WIDE INVESTIGATION

FIGURE

3-2

August 21, 1996

Mr. Robert McCollum  
Division of Game and Fish  
Alabama Department of Conservation  
and Natural Resources  
64 N. Union St., Room 584  
Montgomery, AL 36130

**Re: Threatened and Endangered Species Information**

Dear Mr. McCollum:

The purpose of this letter is to request the most recent information concerning the occurrence of threatened and/or endangered plant and animal species, any habitats of special concern, and/or environmentally sensitive areas at or in the vicinity (within a three mile radius) of the site indicated on the enclosed figure. If such areas exist at or in the vicinity of the site, but are not in a position to be potentially impacted by the site, please indicate this in your response.

The site location can be found on the USGA Topographical Quadrangle Birmingham, North Alabama map (see attached site location map). Geraghty & Miller, Inc. is preparing an environmental study of the site and your information will be included in the report summarizing this study. A similar request has been sent to the Alabama Natural Heritage Program.

Thank you for your attention to this matter. If you have any questions, please do not hesitate to contact me at (919) 571-1662.

Sincerely,

GERAGHTY & MILLER, INC.



Rob Drake  
Staff Scientist/Biologist

Enclosure





STATE OF ALABAMA  
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

64 NORTH UNION STREET  
POST OFFICE BOX 301456  
MONTGOMERY, ALABAMA 36130-1456

JIM FOLSOM  
GOVERNOR

CHARLEY GRIMSLEY  
COMMISSIONER

DIVISION OF GAME AND FISH  
CHARLES D. KELLEY  
DIRECTOR

26 August 1996

Rob Drake  
Staff Scientist/Biologist  
GERAGHTY & MILLER, INC.  
Cross Pointe II  
2840 Plaza Place, Suite 350  
Raleigh, North Carolina 27612

Dear Mr. Drake,

This letter is to inform you that there is an endangered animal species in the vicinity of the site indicated on the figure you sent me. The Federally listed Watercress Darter (*Etheostoma nuchale*) inhabits Roebuck Springs which is located east of the site location (see figure). I cannot determine from the figure you sent me whether the site location presents potential impact to the Watercress Darter or to Roebuck Springs, nor can I determine the proximity of Roebuck Springs to the site location.

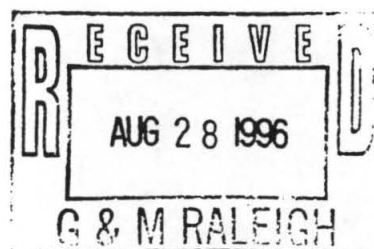
Enclosed for your information are a list of Federally designated Threatened and Endangered species known to occur in Alabama and the list of State-protected animal species.

Sincerely,

*Bob M<sup>c</sup>Collum*

Bob M<sup>c</sup>Collum  
Nongame Biologist

Enclosures

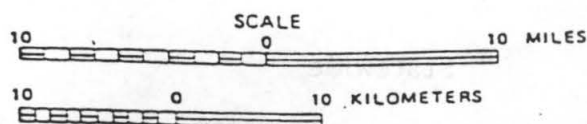
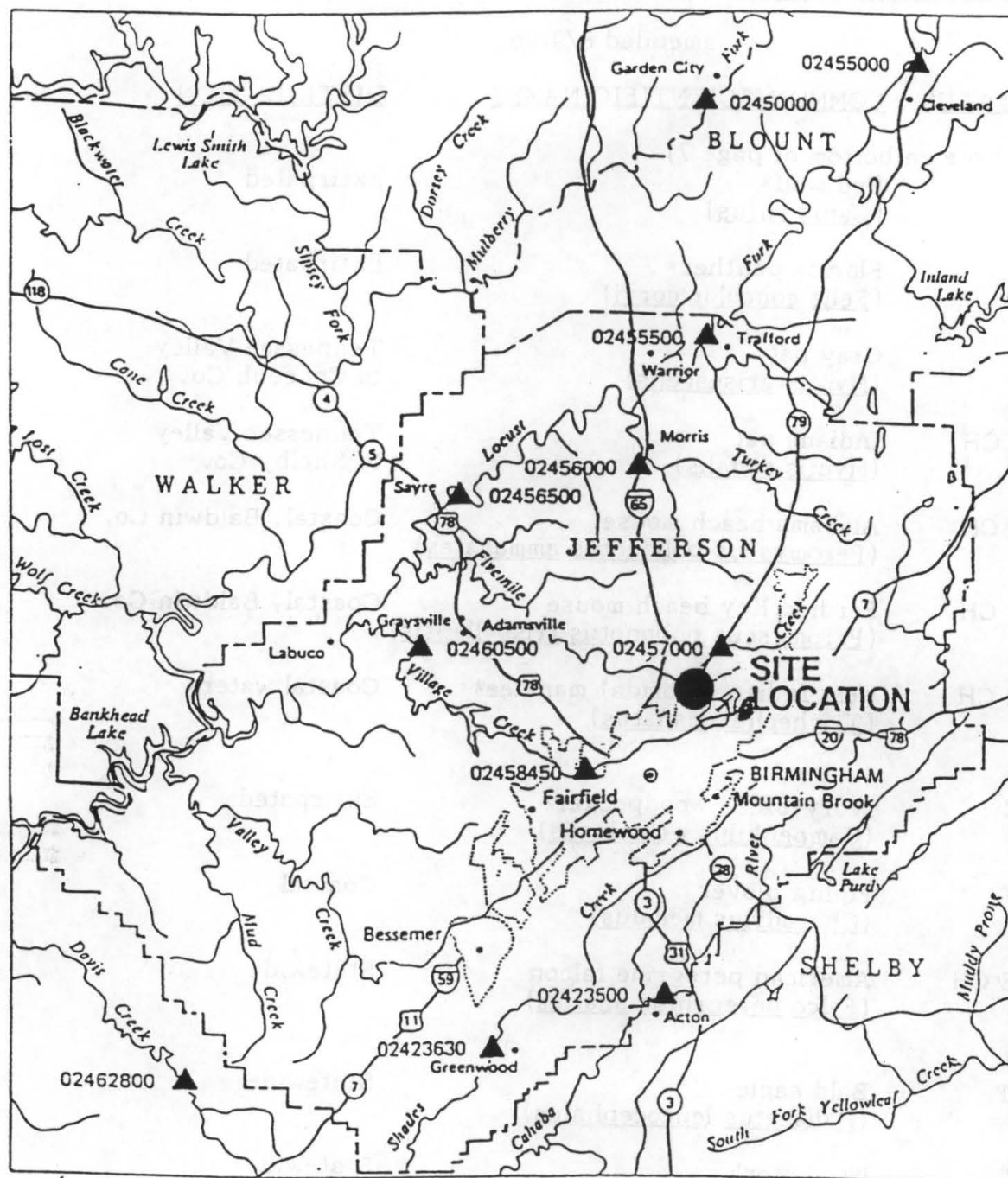


87°

86°30'

34°

33°30'



## EXPLANATION

02462800 ▲ — CONTINUOUS RECORD  
GAGING STATION  
AND NUMBER

SOURCE: GEOLOGICAL SURVEY OF ALABAMA, ATLAS 16, 1980

 **GERAGHTY  
& MILLER, INC.**  
Environmental Services

## REGIONAL SURFACE WATER HYDROLOGY

FACILITY — WIDE INVESTIGATION

FIGURE

3-2



# ALABAMA

## FEDERALLY LISTED ENDANGERED/THREATENED SPECIES

amended 8/9/96

<u>TAXA</u>	<u>STATUS</u>	<u>COMMON/SCIENTIFIC NAMES</u>	<u>DISTRIBUTION</u>
<u>Mammals</u> (7)	(See Note on bottom of page 7)		
	E	Red wolf* ( <u>Canis rufus</u> )	Extirpated
	E	Florida panther* ( <u>Felis concolor coryi</u> )	Extirpated
	E	Gray bat ( <u>Myotis grisescens</u> )	Tennessee Valley to Conecuh Co.
	E CH	Indiana bat ( <u>Myotis sodalis</u> )	Tennessee Valley to Shelby Co.
	E CH	Alabama beach mouse ( <u>Peromyscus polionotus ammobates</u> )	Coastal, Baldwin Co.
	E CH	Perdido Key beach mouse ( <u>Peromyscus polionotus trissyllepsis</u> )	Coastal, Baldwin Co.
	E CH	West Indian (Florida) manatee* ( <u>Trichechus manatus</u> )	Coastal waters
<u>Birds</u> (8)	E	Ivory-billed woodpecker* ( <u>Campephilus principalis</u> )	Extirpated
	T	Piping plover ( <u>Charadrius melodus</u> )	Coastal
	E CH	American peregrine falcon ( <u>Falco peregrinus anatum</u> )	Statewide
	T	Bald eagle ( <u>Haliaeetus leucocephalus</u> )	Statewide
	E	Wood stork ( <u>Mycteria americana</u> )	Statewide
	E	Eskimo curlew ( <u>Numenius borealis</u> )	Possible migrant
	E	Red-cockaded woodpecker ( <u>Picoides borealis</u> )	Statewide
	E	Bachman's warbler* ( <u>Vermivora bachmanii</u> )	Probably Extirpated

## Reptiles

(9)

T	Loggerhead sea turtle ( <u>Caretta caretta</u> )	Coastal waters
T	Green sea turtle ( <u>Chelonia mydas</u> )	Coastal waters
E CH	Leatherback sea turtle ( <u>Dermochelys coriacea</u> )	Coastal waters
T	Eastern indigo snake ( <u>Drymarchon corais couperi</u> )	Extreme southern counties
E CH	Hawksbill sea turtle ( <u>Eretmochelys imbricata</u> )	Coastal waters
T	Gopher tortoise ( <u>Gopherus polyphemus</u> )	Choctaw, Mobile, Washington Cos.
E	Kemp's (Atlantic) Ridley sea turtle ( <u>Lepidochelys kempii</u> )	Coastal waters
E	Alabama red-bellied turtle ( <u>Pseudemys alabamensis</u> )	Mobile, Baldwin, Monroe Cos.
T	Flattened musk turtle ( <u>Sternotherus depressus</u> )	Upper Black Warrior River system

## Amphibians

(1)

T	Red Hills salamander ( <u>Phaeognathus hubrichti</u> )	South Central
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## Fish

(12)

T	Gulf sturgeon ( <u>Acipenser oxyrhynchus desotoi</u> )	Coastal Delta
T	Pygmy sculpin ( <u>Cottus pygmaeus</u> )	Calhoun County
T	Blue shiner ( <u>Cyprinella caerulea</u> )	Cherokee County
T CH	Spotfin chub ( <u>Cyprinella (=Hybopsis) monacha</u> )	Lauderdale County Colbert County
T CH	Slackwater darter ( <u>Etheostoma boschungii</u> )	Madison, Lauderdale, Limestone Counties
E	Watercress darter ( <u>Etheostoma nuchale</u> )	Jefferson County
E	Boulder darter ( <u>Etheostoma wapiti</u> )	Tennessee River tributaries



E	Cahaba shiner ( <u>Notropis cahabae</u> )	Cahaba River
E	Palezone shiner ( <u>Notropis</u> spp., cf. <u>procne</u> )	Jackson County Paint Rock River
T	Goldline darter ( <u>Percina aurolineata</u> )	Cahaba River system
T	Snail darter ( <u>Percina tanasi</u> )	Madison County Jackson County
E CH	Alabama cavefish ( <u>Speoplatyrhinus poulsoni</u> )	Lauderdale County

Mollusks  
(37)

E	Anthony's riversnail ( <u>Antheurnia anthonyi</u> )	Limestone Creek Limestone Co.
E	Fanshell mussel ( <u>Cyprogenia stegaria</u> )	Tennessee River
E	Dromedary pearly mussel ( <u>Dromus dromas</u> )	Tennessee River
E	Yellow-blossom pearly mussel ( <u>Epioblasma</u> (= <u>Dysnomia</u> ) <u>florentina florentina</u> )	Tennessee River
E	Upland combshell mussel ( <u>Epioblasma metastriata</u> )	Black Warrior, Cahaba, and Coosa River drainages
E	Purple cat's paw pearly mussel ( <u>Epioblasma obliquata</u> )	Tennessee River
E	Southern acornshell mussel ( <u>Epioblasma othcaloogenesis</u> )	Upper Coosa and Cahaba River drainages
E	Southern combshell mussel ( <u>Epioblasma penita</u> )	Tombigbee River, Buttahatchie River
E	Turgid-blossom pearly mussel ( <u>Epioblasma turgidula</u> )	Tennessee River
E	Fine-rayed pigtoe mussel ( <u>Fusconaia cuneolus</u> )	Paint Rock River
E	Shiny pigtoe mussel ( <u>Fusconaia cor</u> (=edgariana))	Paint Rock River
E	Cracking pearly mussel ( <u>Hemistena</u> (= <u>Lastena</u> ) <u>lata</u> )	Tennessee River
T	Fine-lined pocketbook mussel ( <u>Lampsilis altilis</u> )	Statewide

E	Pink mucket pearly mussel ( <u>Lampsilis abrupta</u> (=orbiculata))	Tennessee River, Paint Rock River
T	Orange-nacre mucket ( <u>Lampsilis perovalis</u> )	Tombigbee, Black- Warrior, Alabama, Cahaba drainages
E	Alabama lamp pearly mussel ( <u>Lampsilis virescens</u> )	Paint Rock River, Hurricane Creek
T	Alabama moccasinshell mussel ( <u>Medionidus acutissimus</u> )	Alabama, Tombigbee, Cahaba, Coosa, Black Warrior drainages
E	Coosa moccasinshell mussel ( <u>Medionidus parvulus</u> )	Coosa, Cahaba, and Black Warrior drainages
E	Ring pink mussel ( <u>Obovaria retusa</u> )	Tennessee River
E	Little-wing pearly mussel ( <u>Pegias fabula</u> )	Tennessee River
E	White wartyback pearly mussel ( <u>Plethobasus cicatricosus</u> )	Tennessee River
E	Orange-footed pearly mussel ( <u>Plethobasus cooperianus</u> )	Tennessee River
E	Clubshell ( <u>Pleurobema clava</u> )	Tennessee River drainage
E	Black clubshell mussel ( <u>Pleurobema curtum</u> )	Tombigbee River
E	Southern clubshell mussel ( <u>Pleurobema decisum</u> )	Statewide except Mobile Delta
E	Dark pigtoe mussel ( <u>Pleurobema furvum</u> )	Black Warrior River drainage
E	Southern pigtoe mussel ( <u>Pleurobema georgianum</u> )	Coosa River drainage
E	Flat pigtoe mussel ( <u>Pleurobema marshalli</u> )	Tombigbee River
E	Ovate clubshell mussel ( <u>Pleurobema perovatum</u> )	Statewide
E	Rough pigtoe mussel ( <u>Pleurobema plenum</u> )	Tennessee River
E	Heavy pigtoe mussel ( <u>Pleurobema taitianum</u> )	Tennessee River

T	Inflated heelsplitter mussel ( <u>Potamilus inflatus</u> )	Black Warrior River to Mobile Bay
E	Triangular kidneyshell mussel ( <u>Ptychobranhus greeni</u> )	Black Warrior, Cahaba, and Coosa River drainages
E	Cumberland monkeyface pearly mussel ( <u>Quadrula intermedia</u> )	Tennessee River
E	Stirrup shell mussel ( <u>Quadrula stapes</u> )	Tombigbee River, Sipsey River
E	Pale lilliput pearly mussel ( <u>Toxolasma (=Carunculina) cylindrellus</u> )	Paint Rock River, Hurricane Creek
E	Tulotoma snail ( <u>Tulotoma magnifica</u> )	Coosa River System, Choccolocco Creek

## Arthropods

### Crustacea

(1)

E	Alabama cave shrimp ( <u>Palaemonias alabamiae</u> )	Madison County
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### Insecta

(1)

E	American burying beetle ( <u>Nicrophorus americanus</u> )	Statewide
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### Plants

(18)

T	Little amphianthus ( <u>Amphianthus pusillus</u> )	Chambers, Randolph Counties
T	Price's potato-bean ( <u>Apios priceana</u> )	Marshall, Autauga Cos.
E	Rock cress ( <u>Arabis perstellata</u> )	Bibb County
E	Morefield's leather flower ( <u>Clematis morefieldii</u> )	Madison Co.
E	Alabama leather flower ( <u>Clematis socialis</u> )	St. Clair, Cherokee Counties
E	Leafy prairie-clover ( <u>Dalea foliosa</u> )	Franklin, Morgan, Lawrence, Jefferson Cos.
E	Gentian pinkroot <u>Spigelia gentianoides</u>	Bibb County
T	Lyrate bladder-pod ( <u>Lesquerella lyrata</u> )	Colbert, Franklin Cos.

E	Pondberry ( <u>Lindera melissifolia</u> )	Wilcox County
T	Mohr's Barbara's buttons ( <u>Marshallia mohrii</u> )	Bibb, Cullman, Cherokee, Walker, Etowah Cos.
T	American hart's-tongue fern ( <u>Asplenium scolopendrium</u> var. <u>americanum</u> ) (= <u>Phyllitis japonica</u> ssp. <u>americanum</u> )	Morgan, Jackson Cos.
E	Harperella ( <u>Ptilimnium nodosum</u> )	Cherokee, DeKalb Cos.
T	Kral's water-plantain ( <u>Sagittaria secundifolia</u> )	Cherokee, DeKalb Cos.
E	Green pitcher plant ( <u>Sarracenia oreophila</u> )	Marshall, Jackson, Etowah, DeKalb, Cherokee, Elmore, Russell Cos.
E	Alabama canebrake pitcher-plant ( <u>Sarracenia rubra alabamensis</u> ) (= <u>S. alabamensis</u> ssp. <u>alabamensis</u> )	Autuga, Chilton, Elmore Cos.
E	American chaffseed ( <u>Schwalbea americana</u> )	
T	Alabama streak-sorus fern ( <u>Thelypteris pilosa</u> var. <u>alabamensis</u> )	Winston County
E	Relict trillium ( <u>Trillium reliquum</u> )	Henry, Lee, Bullock Cos.
E	Tennessee yellow-eyed grass ( <u>Xyris tennesseensis</u> )	Franklin Co.

Total Animal Species: 76 (not including 5 species of whales)

Total Plant Species: 18

Status: \* = Not believed to occur in Alabama  
E = endangered  
T = threatened  
CH = critical habitat has been designated

The American alligator is neither threatened nor endangered, but designated so because of similarity of appearance to the threatened American crocodile.

NOTE: There are 5 endangered species of whales found in coastal waters of the southeastern states. These include the finback whale (Balaenoptera physalus), the humpback whale (Megaptera novaeangliae), the right whale (Balaena glacialis), the sei whale (Balaenoptera borealis), and the sperm whale (Physeter catodon). It is possible, though unlikely, that they could appear in Alabama coastal waters.

## ALABAMA

### 220-2-.92 Non-game Species Regulation

(1) It shall be unlawful to take, capture, kill, or attempt to take, capture or kill, possess, sell, trade for anything of monetary value, or offer to sell or trade for anything of monetary value, the following non-game wildlife species (or any parts or reproductive products of such species) without a scientific collection permit or written permit from the Commissioner, Department of Conservation and Natural Resources, which shall specifically state what the permittee may do with regard to said species:

#### (a) FISHES

<u>Common Name</u>	<u>Scientific Name</u>
• Cavefish, Alabama.....	<u>Speoplatyrhinus poulsoni</u>
• Cavefish, Southern.....	<u>Typhlichthys subterraneus</u>
• Chub, Spottfin.....	<u>Cyprinella monacha</u>
• Darter, Boulder.....	<u>Etheostoma wapiti</u>
• Darter, Coldwater.....	<u>Etheostoma ditrema</u>
• Darter, Crystal.....	<u>Crystallaria asprella</u>
• Darter, Goldline.....	<u>Percina aurolineata</u>
• Darter, Slackwater.....	<u>Etheostoma boschungii</u>
• Darter, Snail.....	<u>Percina tanasi</u>
• Darter, Tusculmbia.....	<u>Etheostoma tusculmbia</u>
• Darter, Watercress.....	<u>Etheostoma nuchale</u>
• Madtom, Frecklebelly.....	<u>Noturus munitus</u>
• Sculpin, Pygmy.....	<u>Cottus pygmaeus</u>
• Shiner, Blue.....	<u>Cyprinella caerulea</u>
• Shiner, Cahaba.....	<u>Notropis cahabae</u>
• Shiner, Palezone.....	<u>Notropis albinotus</u>

#### (b) AMPHIBIANS

<u>Common Name</u>	<u>Scientific Name</u>
• Frog, Dusky Gopher.....	<u>Rana capito sevosa</u>
• Hellbender, Eastern.....	<u>Cryptobranchus alleganiensis alleganiensis</u>
• Salamander, Flatwoods.....	<u>Ambystoma cingulatum</u>
• Salamander, Green.....	<u>Aneides aeneus</u>
• Salamander, Red Hills.....	<u>Phaeognathus hubrichti</u>
• Salamander, Seal.....	<u>Desmognathus monticola</u> (of Coastal Plain origin)
• Salamander, Tennessee Cave.....	<u>Gyrinophilus pallescens</u>
• Treefrog, Pine Barrens.....	<u>Hyla andersonii</u>

#### (c) REPTILES

<u>Common Name</u>	<u>Scientific Name</u>
• Coachwhip, Eastern.....	<u>Masticophis flagellum flagellum</u>
• Snake, Black Pine.....	<u>Pituophis melanoleucus lodingi</u>
• Snake, Eastern Indigo.....	<u>Drymarchon corais couperi</u>
• Snake, Florida Pine.....	<u>Pituophis melanoleucus mugitus</u>
• Snake, Gulf Salt Marsh.....	<u>Nerodia fasciata clarki</u>
• Snake, Southern Hognose.....	<u>Heterodon simus</u>
• Terrapin, Mississippi Diamondback.....	<u>Malaclemys terrapin pilcata</u>
• Tortoise, Gopher.....	<u>Gopherus polyphemus</u>
• Turtle, Alabama Map.....	<u>Graptemys pulchra</u>
• Turtle, Alabama Red-bellied.....	<u>Pseudemys alabamensis</u>
• Turtle, Alligator Snapping.....	<u>Macrolemys temminckii</u>
• Turtle, Barbour's Map.....	<u>Graptemys barbouri</u>

(d) BIRDS

<u>Common Name</u>	<u>Scientific Name</u>
• Crane, Mississippi Sandhill .....	<u>Grus canadensis pulla</u>
• Dove, Common Ground .....	<u>Columbina passerina</u>
• Eagle, Bald .....	<u>Haliaeetus leucocephalus</u>
• Eagle, Golden .....	<u>Aquila chrysaetos</u>
• Egret, Reddish .....	<u>Egretta rufescens</u>
• Falcon, Peregrine .....	<u>Falco peregrinus</u>
• Hawk, Cooper's .....	<u>Accipiter cooperi</u>
• Merlin .....	<u>Falco columbarius</u>
• Osprey .....	<u>Pandion haliaetus</u>
• Oystercatcher, American .....	<u>Haematopus palliatus</u>
• Pelican, American White .....	<u>Pelecanus erythrorhynchos</u>
• Plover, Piping .....	<u>Charadrius melodus</u>
• Plover, Snowy .....	<u>Charadrius alexandrinus</u>
• Plover, Wilson's .....	<u>Charadrius wilsonia</u>
• Stork, Wood .....	<u>Mycteria americana</u>
• Tern, Gull-billed .....	<u>Sterna nilotica</u>
• Warbler, Bachman's .....	<u>Vermivora bachmani</u>
• Woodpecker, Red-cockaded .....	<u>Picoides borealis</u>
• Wren, Bewick's .....	<u>Thryomanes bewickii</u>

(e) MAMMALS

<u>Common Name</u>	<u>Scientific Name</u>
• Bat, Gray Myotis .....	<u>Myotis grisescens</u>
• Bat, Indiana .....	<u>Myotis sodalis</u>
• Bat, Rafinesque's Big-eared .....	<u>Plecotus rafinesquii</u>
• Bat, Southeastern .....	<u>Myotis austroriparius</u>
• Gopher, Southeastern Pocket .....	<u>Geomys pinetis</u>
• Mouse, Alabama Beach .....	<u>Peromyscus polionotus ammobates</u>
• Mouse, Meadow Jumping .....	<u>Zapus hudsonius</u>
• Mouse, Perdido Key Beach .....	<u>Peromyscus polionotus trissylepsis</u>
• Weasel, Long-tailed .....	<u>Mustela frenata</u>

(f) Other State or Federally protected non-game species.

In addition any required federal permits for federally protected species must be obtained.

(2) It shall be unlawful to collect or offer for sale, sell, or trade for anything of value any box turtle (Terrapene carolina), box turtle part or reproductive product except by permit as outlined in paragraph (1).

(3) It shall be unlawful to collect, harvest, possess, offer for sale, sell or trade for anything of monetary value any common snapping turtle (Chelydra serpentina serpentina) or soft shell turtles (Apalone ferox, Apalone muticus muticus, Apalone muticus calvatus, Apalone spiniferus spiniferus, Apalone spiniferus asper) with a carapace length less than eight inches. (Except any species protected under this paragraph taken in a live trap by a pond owner or his agent while controlling nuisance animals is exempt but may not be sold or offered for sale or traded for anything of monetary value.)

(4) Informational Note: See Section 9-11-269, Code of Alabama 1975, relating to protection of the flattened musk turtle (Sternotherus minor depressus).



I, JAMES GRASSIAWO, am responsible for filing documents in the

(Name of file) SLOSS IND, B'HAM file. The attached document,

(Name of document) RFI LAND DISPOSAL AREAS, VOL I of III

was originally submitted to the Alabama Department of Environmental  
Management in a 3-ring binder.

For ease of filing, only the binder has changed. No material has changed in the  
document. No other alterations have been made to said document, and it is  
otherwise in its original form as submitted to the Alabama Department of  
Environmental Management.



Done this 10th of Feb, 1999.

Witness:



**RCRA FACILITY INVESTIGATION  
LAND DISPOSAL AREAS  
VOLUME II OF III**

**INVESTIGATION DERIVED WASTE REPORT**

---

Sloss Industries, Inc.  
Birmingham, Alabama

MAR 1998  
RECEIVED  
LAND DIVISION



**ARCADIS**

GERAGHTY & MILLER

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Address:  
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**REPORT**

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January 1998



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## GLOSSARY OF ABBREVIATIONS

BTF	Biological Treatment Facility
CFR	Code of Federal Regulations
DOT	Department of Transportation
IDW	Investigation Derived Waste
MCL	Maximum Contaminant Level
mg/L	Milligrams per Liter
PAH	Polycyclic Aromatic Hydrocarbon
PP	Priority Pollutant
RCRA	Resource Conservation Recovery Act
RFI	RCRA Facility Investigation
RBC	Risk-Based Concentration
SVOCs	Semivolatile Organic Compounds
SWMU	Solid Waste Management Unit
TC	Toxicity Characteristic
TCLP	Toxicity Characteristic Leaching Procedure
TSD	Treatment, Storage, or Disposal
USEPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds

## **1.0 INTRODUCTION**

Sloss Industries Corporation (Sloss) in Birmingham, Alabama conducted the Land Disposal Areas portion of the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) in June through August 1997. Investigation derived waste (IDW) was generated during the course of the investigation from the installation of 6 new monitor wells and 10 soil borings and groundwater sampling of 20 monitor wells (Figures 1-1 and 1-2). The IDW resulted from 1) soil and rock cuttings generated during the installation of the six new monitor wells and soil cuttings generated during installation of 10 soil borings located adjacent to existing monitor wells, 2) purge water generated during development water from the six new monitor wells and groundwater sampling of 20 monitor wells, 3) liquids and cuttings (from decontamination of drilling equipment) generated from decontamination of personnel and equipment at the decontamination pad, and 4) decontamination pad materials.

A decontamination pad for decontamination of drilling equipment was constructed on a bermed, concrete pad at the Sloss facility, near the Chemical Manufacturing Plant, using visquene. As a result of the hot, dry Birmingham summer, water used during decontamination had for the most part evaporated during the course of the Land Disposal Areas investigation.

During the Land Disposal Areas investigation, all IDW materials were stored in Department of Transportation (DOT) approved 55-gallon drums and initially staged adjacent to the monitor well or boring generating the material. The drums were properly labeled indicating the location from which the material was generated, the type of material stored, and the date generated. At the conclusion of the field program, the IDW drums were placed on pallets and centralized to a bermed, concrete pad near the Chemical Manufacturing Plant where the decontamination pad was constructed.

The U.S. Environmental Protection Agency (USEPA) Region IV guidance document, "Management of Contaminated Media," Guidance Number TSC-92-02, dated December 28, 1992, was used as a guideline for characterization and handling of the IDW materials (Appendix A). This RFI Land Disposal Areas IDW Report discusses the characterization rationale, sampling and analytical results, characterization of IDW, and recommended management practices for the IDW material.

## **2.0 IDW CHARACTERIZATION RATIONALE**

The USEPA guidance document TSC-92-02 regarding management of contaminated media (groundwater, surface water, soils, and sediments) was used to develop the rationale for management of the IDW generated during the Land Disposal Areas investigation at Sloss Industries.

### **2.1 USEPA POLICY**

All currently available USEPA policy pertains to environmental media known to be contaminated with a listed hazardous waste. These documents collectively make up the "contained-in" policy. However, the "contained-in" policy does not address contamination from characteristic hazardous waste. Furthermore, many times there is no clear documentation that an environmental media was contaminated by either a listed or characteristic hazardous waste (as is often the case at solid waste management units). Consequently, USEPA has clarified this area as it pertains to "contaminated media" (USEPA Guidance Number TSC-92-02).

Human health and environmental risk are the basis for controlled management of IDW per USEPA Region IV guidance. By definition, a medium is "contaminated" if one or more hazardous constituents, as identified in 40 Code of Federal Regulations (CFR) Part 261 Appendix VIII, are present above levels of human health or environmental concern and above naturally occurring (background) levels (this is specifically for areas where there are naturally occurring high levels of Appendix VIII constituents). According to USEPA, contaminated environmental media should either be managed in accordance with RCRA Subtitle C requirements or "best management practices." However, if a contaminated medium is treated to concentrations at or below risk-based standards (or to naturally occurring background levels), it can be rendered "decontaminated."

### 2.1.1 USEPA Contaminated Media Management

Once an environmental medium is determined to be “contaminated,” knowledge of how the medium became contaminated dictates how that medium must be managed. The decision matrix in Figure 2-1 was provided by USEPA to assist the user in making the correct regulatory decision for management of contaminated media. A contaminated media must ultimately be managed in one of two ways, 1) as if it were a hazardous waste, or 2) in accordance with “best management practices.”

The USEPA Region IV Decision Matrix for Managing Contaminated Media, as shown in Figure 2-1, is summarized below:

- 1) Determine if the medium is a listed waste or contaminated by a listed waste. Both contaminated media which are themselves listed hazardous wastes (P- and U-listed wastes) and media which “contain” listed hazardous waste must be managed in accordance with Subtitle C regulations. Once a medium is decontaminated such that it no longer is a listed hazardous waste (P- and U-listed wastes) or no longer “contains” the listed hazardous waste, the Subtitle C ceases to apply.
- 2) Determine if the medium is contaminated by a characteristic waste. Another way in which media may become “contaminated” is through contact with a characteristic hazardous waste. If it can be validated that the medium was not contaminated by a characteristic hazardous waste, then the medium may be managed in accordance with best management practices.
- 3) Test for hazardous waste characteristics and determine if medium exhibits a hazardous waste characteristic. If knowledge of the originating waste stream indicates that contamination did result from a characteristic hazardous waste, or if



the source of contamination is unknown, then the medium must be tested to determine whether it exhibits a hazardous waste characteristic.

- 4) Compare results to risk-based levels to determine if the soil is contaminated. If contaminated, best management practices should be applied.

In summary, contaminated media which are themselves hazardous wastes (P- and U-listed wastes); media which exhibit a hazardous waste characteristic; and media which “contain” listed hazardous waste must be managed in accordance with Subtitle C regulations. Where documentation does not exist to confirm that the contamination source (or the medium of interest, in the case of P- and U-listed wastes) is a listed waste and the medium does not exhibit a hazardous waste characteristic, best management practices should be applied.

The USEPA policy indicates that decontamination is required for all Appendix VIII constituents which are above health-based limits and background, not merely the Appendix VIII constituent for which the waste was listed or which caused the medium to exhibit a hazardous characteristic.

#### **2.1.2 USEPA Site Investigation Residues**

Residues (purge water, drill cuttings, drilling fluids, etc.) from investigative efforts should be containerized from areas of suspected contamination or from areas where documentation does not exist to confirm that the contamination source was a listed hazardous waste until test results are available to determine whether the residue exhibits a hazardous waste characteristic (USEPA Guidance Number TSC-92-02). If the residue does not exhibit a hazardous waste characteristic, then Subtitle C regulations do not apply but the environmental sampling residues should still be managed in a manner that is protective of human health and the environment (i.e. best management practices).

Best management practices should be followed any time test results indicate residues contain hazardous constituents (Appendix VIII) above a health or environmental based limit (but the residues do not exhibit a hazardous characteristic and the contamination is not a listed waste). Best management practices suggest that contaminated sampling residues be treated or disposed in a unit that is operated in accordance with an environmental permit. If treatment or disposal in a permitted unit at the facility is not an available option, then the residues may be sent to an approved off-site facility for treatment or disposal. Alternatively, the residues may be stored at a secure location at the facility until the site under investigation is remediated. The residues should then be included in the remediation process.

## 2.2 SLOSS IDW CHARACTERIZATION RATIONALE

The IDW characterization rationale developed for the Land Disposal Area investigation follows the USEPA decision matrix provided in USEPA Guidance Number TSC-92-02. The following text describes how the matrix steps have been applied to the Sloss Land Disposal Areas IDW. Sloss Industries does not have a RCRA permit and therefore does not have any RCRA units. Sloss is not a Treatment, Storage, or Disposal (TSD) facility.

- 1) Determine if the medium is a listed waste or contaminated by a listed waste: Sloss Industries Corporation produces eight listed wastes: six coking wastes (K087, K141, K142, K143, K144 and K145) generated at the Coke Manufacturing Plant and F003 and F005 wastes generated at the Chemical Manufacturing Plant. The coking wastes are exempt as specified in Alabama Department of Environmental Management Administrative Code Rule 335-14-2-.01(4)(a)(10) because these wastes are recycled to the coke ovens. The F003 and F005 wastes are disposed at a permitted hazardous waste disposal facility as necessary. During the Land Disposal Areas investigation, monitor wells and soil borings were not installed in the vicinity of the Coke Manufacturing Plant and Chemical Manufacturing Plant where these wastes are produced.

- 2) Determine if the medium is contaminated by a characteristic waste. According to plant personnel, the environmental medium has not been contaminated by a characteristic waste. Analytical testing performed as part of Item (3) is used to validate this information.
- 3) Test for hazardous waste characteristics and determine if medium exhibits a hazardous waste characteristic. Soil and groundwater data collected during the Land Disposal Areas investigation was used to determine whether soil cuttings and purge water exhibit a hazardous waste characteristic. Additionally, soil and/or rock cuttings from the six new monitor wells and the decontamination pad and soil cuttings from one soil boring were tested to determine whether they exhibit a hazardous waste characteristic. Total results obtained from the laboratory analyses of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), the thirteen Priority Pollutant (PP) metals, barium, and cyanide were compared with the toxicity characteristics (TC) levels for hazardous waste. Although toxicity characteristic leaching procedure (TCLP) analyses were not performed on drill cuttings, the soil sampling total concentration results were divided by 20, the dilution factor for the TCLP extraction, to determine if the TCLP standards could be exceeded. In the event that a metal or compound appeared to exceed the TCLP level, the drum will be sampled and TCLP analysis will be performed for the analyte in question to confirm the results.
- 4) Compare results to risk-based levels to determine if the soil is contaminated. Sloss Industries Corporation proposes using USEPA Risk-Based Concentrations (RBCs) (October 22, 1997) for soil and tap water or Maximum Contaminant Levels (MCLs) as the risk-based levels used to determine if the soil and rock cuttings and purge water containerized at Sloss are contaminated (Appendix B). The RBCs for industrial soil ingestion will be used to evaluate the soil and rock

cutting data and the EPA MCLs (or RBCs for tap water) will be used to evaluate the purge water data (Table 2-1).

RBCs are chemical concentrations corresponding to fixed levels of risk (i.e., hazard quotient of 1, or a lifetime cancer risk of  $10^{-6}$ , whichever occurs at a lower concentration) (Appendix B). The RBCs were developed by taking toxicity constants (reference doses and carcinogenic potency slopes) and combining these constants with "standard" exposure scenarios. (Appendix B). Rather than developing site specific risk-based levels, Sloss will use the conservative assumptions inherent to RBCs provided by the USEPA to evaluate proper management practices for the Land Disposal Areas IDW. The use of the RBCs appears to satisfy the USEPA Guidance TSC-92-02 criteria for determining risk-based levels for management of contaminated media. The RBCs will be used to evaluate whether the IDW will be managed on site (best management practices) or disposed of offsite (as a contaminated media).

Background soil data collected during the Facility-Wide investigation is also used to determine whether the soil is contaminated (Table 2-1). For example, the naturally occurring concentrations of arsenic and beryllium in the soil exceed the calculated RBCs. In these cases, the cuttings are considered contaminated if concentrations exceed background levels.

### **3.0 CHARACTERIZATION OF IDW**

The procedures utilized to sample and characterize the IDW soil cuttings are discussed in the following sections.

#### **3.1 SAMPLING PROCEDURES**

##### **3.1.1 Soil and/or Rock Cuttings**

IDW soil cuttings, which includes unconsolidated material such as clay and other fill materials, were containerized at SWMUs 23, 38, and 39 from six new monitor well boreholes and 10 soil borings located adjacent to existing monitor wells during the subsurface soil sampling investigation. Additionally, rock and soil cuttings generated during installation of the six new monitor wells were containerized. The rock and soil cuttings generated during monitor well installation and soil cuttings generated during the subsurface soil sampling were containerized in separate drums so the subsurface soil sampling data could be used to characterize the IDW soil cuttings. Samples of the drummed rock and soil cuttings were collected and analyzed to characterize the rock material.

The subsurface soil sampling data collected during the Land Disposal Areas investigation were used to characterize the IDW soil cuttings from four of the six new monitor wells (MW-21, MW-29, MW-33, and MW-37) and from 9 soil borings installed adjacent to existing monitor wells MW-23, MW-24, MW-25S/MW-25D, MW-26, MW-27, MW-28, MW-30D/MW-30S, MW-34S/MW-34D and MW-36 (Tables 3-1 and 3-2). Selected soil samples were analyzed from each monitor well borehole or soil boring for total VOCs (USEPA Method 8260), SVOCs (USEPA Method 8270), the thirteen PP metals, barium and cyanide. Soil samples were collected according to procedures discussed in Section 3.0 of the RFI Land Disposal Areas Report. Appendix A of Volume I of the RFI Land Disposal Areas contains soil sampling logs for the soil samples and

Volume III contains the analytical data and data validation check lists for the soil sampling. Soil sampling data are summarized in Tables 3-1 and 3-2.

Subsurface soil data was not available from the soil boring installed adjacent to MW-32 and from the MW-31 borehole because only fill material (flue dust) was found at these locations and soil samples were not collected for laboratory analysis; therefore, the drummed soil cuttings were sampled to characterize the IDW. Soil cuttings from the subsurface soil sampling and rock cuttings generated during monitor well installation of MW-35 were mixed together; therefore, the drummed soil cuttings were sampled to characterize the IDW.

IDW rock cuttings containerized at new monitor MW-37, IDW rock and soil cuttings containerized at new monitor wells MW-21, MW-29, MW-31, MW-33, and MW-35, and soil cuttings from the soil boring installed adjacent to MW-32 (39-SBMW32) were sampled to characterize the IDW (Table 3-3). Additionally, three drums of soil cutting and decontamination pad material containerized from the decontamination pad were sampled. Several drums of rock and/or soil cuttings were containerized for each well. To prevent volatilization during sampling of the IDW rock and/or soil cuttings, material from each drum was collected for VOC analysis by transferring the soil directly from the drum to the appropriate sample container using a stainless steel spoon. For each monitor well, the VOC samples from the individual drums were composited by the laboratory before VOC analysis.

For non-volatile analysis, soil cuttings were collected from each drum using a stainless steel spoon and placed in a stainless steel bowl, then thoroughly mixed using the stainless steel spoon. The material was scraped from the sides and rolled to the middle of the bowl and initially mixed. The sample was then quartered and moved to the edges of the bowl. Each quarter was then mixed individually. The quarters were then recombined into the center of the bowl and the entire sample was mixed one final time.

The sample was then spooned into wide-mouth glass jars with Teflon<sup>TM</sup> lined caps. The samples were immediately placed in a cooler with ice and transported to the laboratory.

The IDW rock and/or soil cuttings from the new monitor wells, soil boring, and the decontamination pad were sampled and analyzed for total VOCs (USEPA Method 8260A), SVOCs (USEPA Method 8270B), the thirteen PP metals, barium and cyanide. Appendix C of this IDW report contains the soil sampling logs for the IDW rock and/or soil cutting IDW sampling. Analytical results and the data validation check list are included in Volume III of the RFI Land Disposal Areas Report. Soil sampling data is summarized in Table 3-3.

### **3.1.2 Development and Purge Water**

Development of the six newly installed wells and groundwater sampling of 20 new and existing monitor wells at SWMUs 23, 38, and 39 generated purge water which was containerized in drums. The groundwater sampling data collected during Land Disposal Areas investigation were used to characterize the IDW purge water. Groundwater samples were analyzed for total VOCs (USEPA Method 8260), SVOCs (USEPA Method 8270), the thirteen PP metals, barium and cyanide. The groundwater samples were collected according to procedures discussed in Section 3.0 of the RFI Land Disposal Areas Report. Appendix A of Volume I of the RFI Land Disposal Areas Report contains water sampling logs for the groundwater samples and Volume III contains the analytical data and data validation check lists for the groundwater samples. Groundwater data are summarized in Tables 3-4 and 3-5.

### **3.1.3 Decontamination Pad Materials**

Results from the IDW soil cuttings will be used to characterize the drummed visquene from the decontamination pad (Table 3-3). These analytical results will characterize any soil cutting residue remaining on the visquene.

## **3.2 CHARACTERIZATION OF SOIL AND/OR ROCK CUTTING IDW**

Subsurface soil samples collected during the Land Disposal Areas investigation and the IDW rock and/or soil cutting samples from the new monitor wells, one soil boring, and the decontamination pad were analyzed for VOCs, SVOCs, PP metals, barium and cyanide. Three VOCs, 14 SVOCs, 13 of which were polycyclic aromatic hydrocarbons (PAHs), 12 metals and cyanide were detected in the IDW soil. These soil sampling results are summarized in Tables 3-1 through 3-3 and in Section 4.0 of Volume I of the RFI Land Disposal Areas Report.

### **3.2.1 Hazardous Waste Characteristics**

Based on a review of the available analytical data, IDW soil and/or rock cuttings from monitor wells MW-32 and MW-33 containerized during the Land Disposal Areas investigation may exhibit characteristics of hazardous waste because total results for cadmium, chromium, and lead detected in MW-32 soil cuttings and cadmium and lead detected in MW-33 soil and rock cuttings may exceed RCRA TC Levels (Table 3-3). IDW soil and/or rock cuttings from these monitor wells will be sampled and TCLP analysis for cadmium, lead, and chromium will be performed to determine whether the cuttings are hazardous.



### **3.2.2 Contaminated Soil and/or Rock Cutting IDW**

Based on a review of the available analytical data, IDW rock and/or soil cuttings from one new monitor well and two monitor well soil borings contained concentrations which exceeded USEPA Industrial RBCs for soil ingestion (Tables 3-1 to 3-3, and 3-6).

VOC compounds detected did not exceed USEPA Industrial RBCs for soil ingestion. One PAH, benzo(a)pyrene, exceeded the USEPA Industrial RBC for soil ingestion in rock and soil cuttings containerized from MW-35 (Table 3-3).

The USEPA Industrial RBCs for arsenic and beryllium were exceeded in a number of the soil borings (Tables 3-1 through 3-3). In order to evaluate this data, it was necessary to evaluate background concentrations of these constituents. This conclusion was reached based upon USEPA Guidance Number TSC-92-02 which indicates background concentrations can be used to determine if a waste is contaminated.

Site background concentrations of arsenic detected range from 1.9 to 21 milligrams per kilogram (mg/kg) and site background concentrations of beryllium detected range from 0.51 to 2.6 mg/kg. The concentrations of arsenic and beryllium detected in the IDW soil cuttings are within the site background concentration ranges for these compounds based on background soil data collected at the site except for the arsenic concentration in soil sample 970805-LD-23-SL0024(14-16) collected from the monitor well MW-24 soil boring and the beryllium concentration detected in 970807-LD-38-SL0029(19-21) collected from monitor well MW-29 borehole which exceeded the site background concentration range (Tables 3-1 through 3-3).

Based on these results, the IDW soil cuttings from the soil boring installed adjacent to monitor well MW-24 and from the MW-29 borehole and rock and soil cuttings from MW-35 are considered contaminated because of benzo(a)pyrene or metals

(beryllium or arsenic) concentrations (Tables 3-6 and 3-7). The IDW soil cuttings from the decontamination pad did not contain concentrations which exceeded USEPA RBCs.

### **3.3 CHARACTERIZATION OF PURGE WATER IDW**

Groundwater samples collected during the Land Disposal Areas were analyzed for VOCs, SVOCs, PP metals, barium and cyanide. Five VOCs, seven metals and cyanide were detected in the IDW purge water. These groundwater sampling results are summarized in Tables 3-4 and 3-5 and in Section 4.0 of Volume I of the RFI Land Disposal Areas Report

#### **3.3.1 Hazardous Waste Characteristics**

Based on a review of the available analytical data, none of the IDW purge water containerized during the Land Disposal Areas investigation exhibit characteristics of hazardous waste (Tables 3-4 and 3-5)

#### **3.3.2 Contaminated Purge Water IDW**

Based on a review of the available analytical data, IDW purge water from five of the monitor wells contained concentrations which exceeded USEPA MCLs (Tables 3-8).

Benzene detected in MW-26 and MW-34D exceeded the USEPA MCL. SVOCs were not detected in the groundwater samples (Tables 3-4 and 3-5).

Two metals and cyanide exceeded USEPA MCLs. The USEPA MCL for lead was exceeded in MW-34D, the MCL for silver was exceeded in MW-36 and the MCL for cyanide was exceeded in MW-32 and MW-34S (Tables 3-4 and 3-5).

Based on these results, the IDW purge water from five of the monitor wells MW-26, MW-32, MW-34S, MW-34D, and MW-36 are considered contaminated because of benzene, metals (lead and silver), or cyanide concentrations (Table 3-8).

### **3.4 DECONTAMINATION PAD MATERIALS**

#### **3.4.1 Hazardous Waste Characteristics**

Since none of the IDW soil cuttings from the decontamination pad exhibited characteristics of hazardous waste (Section 3.2.1), it follows that the decontamination pad materials do not exhibit characteristics of hazardous waste (Table 3-3).

#### **3.4.2 Contaminated Materials**

Based on a review of the analytical data for the IDW soil cuttings collected from the decontamination pad, it follows that the decontamination pad materials are not contaminated (Tables 3-3 and 3-6).

## **4.0 PROPOSED WASTE MANAGEMENT PRACTICES**

### **4.1 SOIL AND/OR ROCK CUTTING IDW**

Characterization of IDW soil cuttings indicated that IDW soil cuttings, which consist of SWMU 39 flue dust (sludge) or flue dust and limestone, from monitor wells MW-32 and MW-33 may have characteristics of hazardous waste (Tables 3-6 and 3-7). The IDW soil cuttings will be sampled and TCLP analysis performed for the analytes in question. If TCLP results indicate the IDW soil cuttings are hazardous, the proposed management practice for handling and disposal is to handle the drums as hazardous waste and dispose of the material accordingly (Table 3-6). If TCLP results indicate that the IDW soil is not hazardous, the soil will be disposed of as contaminated media. The TCLP results and recommendations for disposal will be provided under separate cover.

IDW soil cuttings containerized from the monitor well MW-24 soil boring (one drum) and the monitor well MW-29 borehole (one drum) and rock and soil cuttings containerized at MW-35 (two drums) contained concentrations of SVOCs (benzo(a)pyrene) which exceeded USEPA Industrial RBCs and/or contained beryllium and arsenic concentrations above site background (Tables 3-6 and 3-7). Because the soil and/or rock cuttings from these soil borings contained concentrations of compounds which exceeded the RBCs or background concentrations, the soil cuttings have been characterized as contaminated media.

The proposed best management practice for handling and disposal of the IDW soil characterized as contaminated from monitor wells MW-24 and MW-29 and soil and rock cuttings from MW-35 is to handle the four drums containing cuttings as if they were a hazardous waste and dispose of the material accordingly (Tables 3-6 and 3-7). Although this material is non-hazardous, solid waste landfills may hesitate to accept the IDW soil cuttings because they are contaminated.

The IDW soil cuttings from the remaining monitor well boreholes and monitor well soil borings and rock and/or soil cuttings from the monitor wells and decontamination pad do not contain concentrations of compounds which exceed USEPA industrial RBCs (Tables 3-6 and 3-7). The proposed best management practice for handling the IDW soil cuttings is to place the material at the on site land disposal area, SWMU 38, Landfill. After removing the IDW soil cuttings, the drums will be triple rinsed, crushed, and placed in the metal scrap pile for recycling at the U.S. Pipe North Birmingham facility. Rinse waters will be collected/directed to the Biological Treatment Facility (BTF).

## **4.2 DEVELOPMENT AND PURGE WATER IDW**

Characterization of IDW purge water indicated that none of the IDW water has characteristics of hazardous waste (Table 3-8).

IDW purge water containerized from monitor wells contained concentrations of one VOC (benzene), two metals (lead and silver), and cyanide which exceeded USEPA MCLs (Tables 3-4 and 3-5). Because the purge water from these monitor wells contained concentrations of compounds which exceeded USEPA MCLs, the purge water has been characterized as contaminated media. The proposed best management practice for handling and disposal of the IDW purge water for monitor wells MW-26, MW-32, MW-34D, MW-34S, and MW-36 is to dispose of the water in the BTF with site process water (Table 3-8). This facility is capable of processing the water and will not result in any exceedences of the Facility's NPDES permit.

The IDW purge water from the remaining 15 monitor wells do not contain concentrations of compounds which exceed USEPA MCLs (Table 3-8). The proposed best management practice for these monitor wells is to dispose of the water in the BTF at the Sloss Facility.

After disposing of the IDW purge water, the drums will be triple rinsed, crushed, and placed in the metal scrap pile for recycling at the U.S. Pipe North Birmingham facility. Rinse waters will also be collected/directed to the BTF.

#### **4.3 DECONTAMINATION PAD MATERIALS**

Decontamination pad materials can be disposed of as a solid waste since the materials are non-hazardous and not contaminated. The decontamination pad materials will be placed in a dumpster at the Sloss Facility and disposed of by the site trash collector.

## 5.0 REFERENCES

- U. S. Environmental Protection Agency, 1997. Risk-Based Concentration Table, October 22, 1997. USEPA Region III, Philadelphia, Pennsylvania. October 22, 1997 Memorandum.
- U. S. Environmental Protection Agency, 1992. Management of Contaminated Media. Guidance Number TSC-92-02. USEPA Region IV, Atlanta, GA. December 28, 1992 Memorandum

## TABLES



**TABLE 2-1**  
**Summary of Site Background Soil Concentration Ranges**  
**and USEPA Risk Based Concentrations**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

CHEMICAL	BACKGROUND CONCENTRATION RANGE	USEPA RBC SOIL INGESTION- RESIDENTIAL <sup>1/</sup>	USEPA RBC SOIL INGESTION- INDUSTRIAL <sup>1/</sup>	RCRA TC Level <sup>5/</sup>
<b><u>Volatile Organic Compounds (ug/kg):</u></b>				
Acetone	ND	7,800,000	200,000,000	NS
Toluene	1.0-7.4	16,000,000	410,000,000	NS
<b><u>Semivolatile Organic Compounds (ug/kg):</u></b>				
* Acenaphthene	ND	4,700,000	120,000,000	NS
* Acenaphthylene	ND	NS	NS	NS
* Anthracene	ND	23,000,000	610,000,000	NS
* Benzo(a)anthracene	33	880	7,800	NS
* Benzo(a)pyrene	40	88	780	NS
* Benzo(b)fluoranthene	65-66	880	7,800	NS
* Benzo(g,h,i)perylene	ND	NS	NS	NS
* Benzo(k)fluoranthene	ND	8,800	78,000	NS
* Chrysene	43	88,000	780,000	NS
* Dibenzo(a,h)anthracene	ND	88	780	NS
* Fluoranthene	58-61	3,100,000	82,000,000	NS
* Fluorene	ND	3,100,000	82,000,000	NS
* Indeno(1,2,3-cd)pyrene	ND	880	7,800	NS
* Phenanthrene	30	NS	NS	NS
* Naphthalene	44-48	3,100,000	82,000,000	NS
* Pyrene	52	2,300,000	61,000,000	NS
<b><u>Metals (mg/kg):</u></b>				
Antimony, Total	ND	31	820	NS
Arsenic, Total	1.9-21	0.43 <sup>2/</sup>	3.8 <sup>2/</sup>	5
Barium, Total	14-200	5,500	140,000	100
Beryllium, Total	0.44-2.6	0.15	1.3	NS
Cadmium, Total	ND	39	1,000	1
Chromium, Total	8.6-46	390 <sup>3/</sup>	10,000 <sup>3/</sup>	5
Copper, Total	5.0-32	270,000	1,000,000	NS
Lead, Total	5.0-23	400	NS	5
Mercury, Total	0.034-0.15	23	610	0.2
Nickel, Total	4.7-47	1,600	41,000	NS
Silver, Total	ND	390	10,000	5
Zinc, Total	8.6-71	23,000	610,000	NS
<b>Cyanide, Total (mg/kg):</b>	ND	1,600	41,000	NS

ND - Not Detected. This constituent was not detected in site background soil samples.

NS - No Standard.

1/ Source: EPA Region III Risk-Based Concentrations (RBCs), October 22, 1997

2/ RBC for arsenic as a carcinogen RBC.

3/ Chromium VI RBC.

4/ TC Level concentrations are in ug/L for VOCs and SVOCs and mg/L for metals.

\* Polycyclic aromatic hydrocarbon (PAH).

**TABLE 3-1**  
**Summary of Constituents Detected in Subsurface**  
**Soil Samples Collected at SWMU 23 in August 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	USEPA RBC	RCRA TC Level <sup>3/</sup>	970806-LD-23- SL0021(14-16)	970806-LD-23- SL0021(20-22)	970806-LD-23- SL9021	970806-LD-23- SL0022(0-2)	970806-LD-23- SL0023(12-14)
LAB ID	Soil Ingestion-		85785-6	85785-5	85785-7	85785-2	85785-3
SAMPLE DATE	Industrial <sup>1/</sup>		8/6/97	8/6/97	8/6/97	8/6/97	8/6/97
<b><u>Volatile Organic Compounds (ug/kg):</u></b>							
Acetone	200,000,000	NS	<72	<75	<77	<57	<60
<b><u>Semivolatile Organic Compounds (ug/kg):</u></b>			ND	ND	ND	ND	ND
<b><u>Metals (mg/kg):</u></b>							
Arsenic, Total	3.8 <sup>2/</sup>	5	3.6 J	2.2 J	2 J	4.6	2.9
Barium, Total	140,000	100	39 J	82	63 J	25	14
Beryllium, Total	1.3	NS	<0.7 UJ	<0.7	<0.8 UJ	<0.6	<0.6
Cadmium, Total	1,000	1	<0.7 UJ	<0.7 UJ	<0.8 UJ	<0.6 UJ	<0.6 UJ
Chromium, Total	10,000 <sup>3/</sup>	5	<1.4 UJ	9.3	15 UJ	11	<1.2
Copper, Total	1,000,000	NS	<2.9 UJ	<3	<3.1 UJ	<2.3	<2.4
Lead, Total	400 <sup>4/</sup>	5	<3.6	<3.7	<3.9	13	<3
Nickel, Total	41,000	NS	<2.9 UJ	28	23 UJ	<2.3	<2.4
Zinc, Total	610,000	NS	41	63	54	41	32
Cyanide, Total (mg/kg):	41,000	NS	0.43	0.34	0.46	<0.2	0.31
Percent Solids (%)	NS	NS	69	67	65	88	84

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**TABLE 3-1**  
**Summary of Constituents Detected in Subsurface**  
**Soil Samples Collected at SWMU 23 in August 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	USEPA RBC	RCRA TC Level <sup>5/</sup>	970806-LD-23- SL0023(24-26)	970805-LD-23- SL0024(7-9)	970805-LD-23- SL0024(14-16)	970805-LD-23- SL0025(19-21)
LAB ID	Soil Ingestion-		85785-4	85657-17	85657-19	85657-16
SAMPLE DATE	Industrial <sup>1/</sup>		8/6/97	8/5/97	8/5/97	8/5/97
<b><u>Volatile Organic Compounds (ug/kg):</u></b>						
Acetone	200,000,000	NS	<61	<61	<72	110
<b><u>Semivolatile Organic Compounds (ug/kg):</u></b>			ND	ND	ND	ND
<b><u>Metals (mg/kg):</u></b>						
Arsenic, Total	3.8 <sup>2/</sup>	5	6.3	13	30	3.8
Barium, Total	140,000	100	76	43	53	180
Beryllium, Total	1.3	NS	<0.6	<0.6	0.7	<0.6
Cadmium, Total	1,000	1	<0.6 UJ	2.5	2.4	<0.6
Chromium, Total	10,000 <sup>3/</sup>	5	<1.2	7	19	15
Copper, Total	1,000,000	NS	<2.5	5	22	<2.5
Lead, Total	400 <sup>4/</sup>	5	10	4.4	19	<3.2
Nickel, Total	41,000	NS	8.8	45	66	18
Zinc, Total	610,000	NS	70	83	430	47
Cyanide, Total (mg/kg):	41,000	NS	<0.3	<0.3	<0.3	<0.3
Percent Solids (%)	NS	NS	82	82	70	78

NOTE: Sample 970806-LD-23-SL9021 is the duplicate of 970806-LD-23-SL0021 (20-22)

Explanation:

J Positive results have been classified as qualitative during data validation.

UJ Analyte was not detected at or above the indicated concentration and has been classified as qualitative.

ND Not detected. Analytes in this group were all below their respective detection limits.

ug/kg Micrograms per kilogram.

mg/kg Milligrams per kilogram.

Concentration exceeds Industrial RBC

Concentration exceeds Industrial RBC and background soil concentrations.

1/ Source: USEPA Region III Risk Based Concentrations (RBC), October 22, 1997.

2/ RBC for Arsenic as a carcinogen

3/ RBC for Chromium VI.

4/ Residential RBC.

5/ TC Levels for metals are in milligrams per liter (mg/L).

**TABLE 3-2**  
**Summary of Constituents Detected in Subsurface Soil Samples**  
**Collected at SWMUs 38 and 39 in August 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	USEPA RBC Soil Ingestion-Industrial <sup>1/</sup>	RCRA TC Level <sup>5/</sup>	SWMU 38						
			970804-LD-38-SL0026(10-12)	970804-LD-38-SL9026	970804-LD-38-SL0026(18-20)	970805-LD-38-SL0027(11-13)	970805-LD-38-SL0027(22-24)	970808-LD-38-SL0027(22-24)	970807-LD-38-SL0028(8-10)
LAB ID			85657-5	85657-8	85657-6	85657-13	85657-14	85785-18	85785-12
SAMPLE DATE			8/4/97	8/4/97	8/4/97	8/5/97	8/5/97	8/8/97	8/7/97
<b><u>Volatile Organic Compounds (ug/kg):</u></b>									
Toluene	410,000,000	NS	<7	8	<6	<6	NA	<7	<7
<b><u>Semivolatile Organic Compounds (ug/kg):</u></b>			ND	ND	ND	ND	ND	NA	ND
<b><u>Metals (mg/kg):</u></b>									
Antimony, Total	820	NS	<6.7	<6.7	<5.9	<6.1	<7.6	NA	9.6
Arsenic, Total	3.8 <sup>2/</sup>	5	3.3 J	3.5 J	1.8 J	4.1	2.3	NA	<1.3
Barium, Total	140,000	100	110	110	99	8.6	17	NA	19
Beryllium, Total	1.3	NS	1.9	1.6	<0.6	<0.6	<0.8	NA	<0.6
Chromium, Total	10,000 <sup>3/</sup>	5	9.3	8.5	15	15	2.4	NA	15
Copper, Total	1,000,000	NS	6.5	15	6.5	<2.4	<3	NA	6.1
Lead, Total	400 <sup>4/</sup>	5	6.4	5.5	<3	<3	<3.8	NA	7.9
Nickel, Total	41,000	NS	32	29	20	<2.4	4.4	NA	<2.7
Silver, Total	10,000	5	<1.3 UJ	<1.3 UJ	<1.2 UJ	<1.2 UJ	<1.5 UJ	NA	<1.3 UJ
Zinc, Total	610,000	NS	76	51	60	23	18	NA	31
Cyanide, Total (mg/kg):	41,000	NS	<0.3	<0.3	<0.2	<0.2	<0.3	NA	<0.3
Percent Solids (%)	NS	NS	76	76	87	83	66	72	75

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**TABLE 3-2**  
**Summary of Constituents Detected in Subsurface Soil Samples**  
**Collected at SWMUs 38 and 39 in August 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	USEPA RBC Soil Ingestion-	RCRA TC Level <sup>5/</sup>	SWMU 38						
			970807-LD-38- SL0028(13-15)	970807-LD-38- SL0029(15-17)	970807-LD-38- SL0029(19-21)	970807-LD-38- SL0030(9-11)	970807-LD-38- SL0030(17-19)	970808-LD-38- SL0037(4-6)	970808-LD-38- SL0037(8-10)
LAB ID	Industrial <sup>1/</sup>		85785-14	85785-10	85785-11	85785-8	85785-9	85785-21	85785-20
SAMPLE DATE			8/7/97	8/7/97	8/7/97	8/7/97	8/7/97	8/8/97	8/8/97
<b><u>Volatile Organic Compounds (ug/kg):</u></b>									
Toluene	410,000,000	NS	<7	<7	<7	<6	<7	<7	<7
<b><u>Semivolatile Organic Comounds (ug/kg):</u></b>			ND	ND	ND	ND	ND	ND	ND
<b><u>Metals (mg/kg):</u></b>									
Antimony, Total	820	NS	<6.8	<6.7	<6.7	<5.9	<6.7	<6.7	<6.7
Arsenic, Total	3.8 <sup>2/</sup>	5	1.8	<1.3	2.1	4.3 J	5.1 J	2	3.5
Barium, Total	140,000	100	120	70	130	61	130	2.4	94
Beryllium, Total	1.3	NS	<0.7	<0.7	2.8	<0.6 UJ	<0.8 UJ	<0.7	<0.7
Chromium, Total	10,000 <sup>3/</sup>	5	10	6	3.1	9.4	11	19	5.7
Copper, Total	1,000,000	NS	<2.7	5.2	5.5	<2.3 UJ	110 J	<2.7	<2.7
Lead, Total	400 <sup>4/</sup>	5	36	5	<3.4	<2.9	<3.3	9.4	11
Nickel, Total	41,000	NS	23	5.4	24	<2.3	<2.7	<2.7	3
Silver, Total	10,000	5	<1.4 UJ	<1.3 UJ	<1.3 UJ	<1.2	7.6	<1.3 UJ	<1.3 UJ
Zinc, Total	610,000	NS	62	47	79	54	190	10	63
Cyanide, Total (mg/kg):	41,000	NS	<0.3	<0.3	<0.3	<0.2	<0.3	<0.3	<0.3
Percent Solids (%)	NS	NS	74	75	75	86	75	75	75

Footnotes on Page 3

**TABLE 3-2**  
**Summary of Constituents Detected in Subsurface Soil Samples**  
**Collected at SWMUs 38 and 39 in August 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	USEPA RBC Soil Ingestion-Industrial <sup>1/</sup>	RCRA TC Level <sup>5/</sup>	SWMU 39						
			970808-LD-39-SL0033(11-13)	970805-LD-39-SL0034(10-12)	970808-LD-39-SL0034(10-12)	970808-LD-39-SL0035(10-12)	970804-LD-39-SL0036(5-7)	970804-LD-39-SL9036	970804-LD-39-SL0036(10-12)
LAB ID			85785-23	85657-15	85785-19	85785-22	85657-2	85657-7	85657-4
SAMPLE DATE			8/8/97	8/5/97	8/8/97	8/8/97	8/4/97	8/4/97	8/4/97
<b><u>Volatile Organic Compounds (ug/kg):</u></b>									
Toluene	410,000,000	NS	<6	NA	<6	<7	<6	<6	<7
<b><u>Semivolatile Organic Compounds (ug/kg):</u></b>			ND	ND	ND	ND	ND	ND	ND
<b><u>Metals (mg/kg):</u></b>									
Antimony, Total	820	NS	<6.2	<6	NA	<7.5	<6	<6.1	<7.3
Arsenic, Total	3.8 <sup>2/</sup>	5	5	5.2	NA	2.7	4.2	3.5 J	4.8
Barium, Total	140,000	100	420	180	NA	130	140	140	110
Beryllium, Total	1.3	NS	<0.6	<0.6	NA	<0.7	<0.6	<0.6	<0.7
Chromium, Total	10,000 <sup>3/</sup>	5	10	13	NA	11	8.9	7.9	11
Copper, Total	1,000,000	NS	4.3	<2.4	NA	<3	16	21	9.3
Lead, Total	400 <sup>4/</sup>	5	9.3	10	NA	7.9	28	16	6
Nickel, Total	41,000	NS	22	6	NA	9.3	7.1	7.2	11
Silver, Total	10,000	5	<1.2 UJ	<1.2 UJ	NA	<1.5 UJ	<2.1 UJ	<1.2 UJ	<1.5 UJ
Zinc, Total	610,000	NS	53	46	NA	57	58	57	96
<b>Cyanide, Total (mg/kg):</b>	41,000	NS	1.25	0.7	NA	<0.3	<0.2	<0.2	<0.3
<b>Percent Solids (%)</b>	NS	NS	82	83	84	67	84	83	69

NA

Not Analyzed

NS

No Standard

ND

Not detected. Analytes in this group were all below their respective detection limits.

J

Positive results have been classified as qualitative during data validation.

U

Classified as nondetected.

ug/kg

Micrograms per kilogram.

mg/kg

Milligrams per kilogram.

<sup>1/</sup> Source: USEPA Region III Risk Based Concentrations (RBC), October 22, 1997<sup>2/</sup> RBC for Arsenic as a carcinogen.<sup>3/</sup> RBC for chromium VI<sup>4/</sup> Residential RBC<sup>5/</sup> RCRA TC Levels for metals are in milligrams per liter (mg/L).

Concentration exceeds USEPA Industrial RBC

Concentration exceeds USEPA Industrial RBC and background soil concentration.

Note: Sample 970804-LD-38-SL9025 is the duplicate of 970804-LD-38-SL0025(10-12);

Sample 970804-LD-39-SL9036 is the duplicate of 970804-LD-39-SL0036(5-7).

**TABLE 3-3**  
**Summary of Constituents Detected in Investigation**  
**Derived Waste Soil Samples Collected in August 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	USEPA RBC Soil Ingestion-	RCRA TC Level <sup>5/</sup>	970822-LD- IW-SL0021	970822-LD- IW-SL0029	970822-LD- IW-SL0031	970822-LD- IW-SL0032	970822-LD- IW-SL0033	970822-LD- IW-SL0035	970822-LD- IW-SL0037	970822-LD-IW- SL9999
LAB ID	Industrial <sup>1/</sup>		86235-1	86235-10	86235-7&-8	86235-9	86235-5 & -6	86235-2 & -3	86235-4	86235-11 & -12
SAMPLE DATE			8/22/97	8/22/97	8/22/97	8/22/97	8/22/97	8/22/97	8/22/97	8/22/97
<b><u>Volatile Organic Compounds (ug/kg):</u></b>										
Toluene	410,000,000	NS	<6	<7	<6	7	<6	<6	<6	28
Xylenes	1,000,000,000	NS	<6	<7	<6	<6	<6	<6	<6	7
<b><u>Semivolatile Organic Compounds (ug/kg):</u></b>										
Anthracene	610,000,000	NS	<380	<430	<430	<380	<430	710	<410	<330
Benzo(a)anthracene	7,800	NS	<380	<430	<430	500	<430	1900	<410	380
Benzo(a)pyrene	780	NS	<380	<430	<430	420	<430	1400	<410	<330
Benzo(b)fluoranthene	7,800	NS	<380	<430	<430	<380	<430	1000	<410	<330
Benzo(g,h,i)perylene	NS	NS	<380	<430	<430	410	<430	1100	<410	<330
Benzo(k)fluoranthene	78,000	NS	<380	<430	<430	500	<430	1400	<410	400
Bis(2-ethylhexyl)phthalate	410,000	NS	1400	<430	<430	2000	<430	400	<410	3200
Chrysene	780,000	NS	<380	<430	<430	550	<430	1800	<410	460
Fluoranthene	82,000,000	NS	<380	<430	<430	830	<430	2300	<410	720
Fluorene	82,000,000	NS	<380	<430	<430	<380	<430	620	<410	<330
Indeno(1,2,3-cd)pyrene	7,800	NS	<380	<430	<430	<380	<430	950	<410	<330
Naphthalene	82,000,000	NS	<380	<430	<430	<380	<430	700	<410	<330
Phenanthrene	NS	NS	<380	<430	<430	760	<430	2000	<410	450
Pyrene	61,000,000	NS	<380	<430	<430	1100	<430	2700	<410	840
<b><u>Metals (mg/kg):</u></b>										
Antimony, Total	820	NS	<5.7 UJ	<6.5 UJ	<6.6 UJ	7 J	<6.6 UJ	<5.4 UJ	<6.3 UJ	<5.1 UJ
Arsenic, Total	3.8 <sup>2/</sup>	5	<1 UJ	<1 UJ	2.9 J	6.3 J	3.8 J	1.8 J	<1 UJ	4.2 J
Barium, Total	140,000	100	45 J	22 J	92 J	290 J	140 J	120 J	19 J	110 J
Beryllium, Total	1.3	NS	<0.6 UJ	<0.7 UJ	1.2 J	1 J	1.7 J	0.9 J	0.8 J	0.9 J
Cadmium, Total	1,000	1	1.7 J	<0.7 UJ	17 J	34 J	23 J	3.8 J	1.6 J	11 J
Chromium, Total	10,000 <sup>3/</sup>	5	7.9 J	3 J	<1.3 UJ	220 J	22 J	5.5 J	1.6 J	32 J
Copper, Total	82,000	NS	13 J	5.7 J	97 J	270 J	86 J	19 J	13 J	120 J

TABLE 3-3

**Summary of Constituents Detected in Investigation  
Derived Waste Soil Samples Collected in August 1997  
Land Disposal Areas RFI  
Sloss Industries Corporation**

SAMPLE ID	USEPA RBC Soil Ingestion-	RCRA TC Level <sup>5/</sup>	970822-LD- IW-SL0021	970822-LD- IW-SL0029	970822-LD- IW-SL0031	970822-LD- IW-SL0032	970822-LD- IW-SL0033	970822-LD- IW-SL0035	970822-LD- IW-SL0037	970822-LD-IW- SL9999
LAB ID	Industrial <sup>1/</sup>		86235-1	86235-10	86235-7&-8	86235-9	86235-5 & -6	86235-2 & -3	86235-4	86235-11 & -12
SAMPLE DATE			8/22/97	8/22/97	8/22/97	8/22/97	8/22/97	8/22/97	8/22/97	8/22/97
<b>Metals continued (mg/kg):</b>										
Lead, Total	400 <sup>4/</sup>	5	<2.9 UJ	<3.3 UJ	99 J	360 J	120 J	36 J	<3.1 UJ	99 UJ
Mercury, Total	610	0.2	<0.25	<0.25	<0.25	0.4	<0.25	<0.25	<0.25	<0.25
Nickel, Total	41,000	NS	15 J	5.9 J	19 J	110 J	18 J	5.6 J	4.6 J	16 J
Silver, Total	10,000	5	<1.1 UJ	<1.3 UJ	2.4 J	3 J	1.4 J	<1.1 UJ	<1.3 UJ	<1 UJ
Zinc, Total	610,000	NS	35 J	16 J	1000 J	1800 J	1300 J	88 J	35 J	580 J
Cyanide, Total (mg/kg):	41,000	NS	<0.2	<0.3	2.3	2.8	4	1.9	0.3	3.5
Percent Solids (%)	NS	NS	88	77	76	87	76.1	92.7	79.6	97.4

## Explanation:

J Positive results have been classified as qualitative during data validation.

UJ Analyte was not detected at or above the indicated concentration and has been classified as qualitative.

ug/kg Micrograms per kilogram.

mg/kg Milligrams per kilogram.

Concentration exceeds Industrial RBC

Concentration may exceed RCRA TC Level

1/ Source: USEPA Region III Risk Based Concentrations (RBC), October 22, 1997.

2/ RBC for Arsenic as a carcinogen.

3/ RBC for Chromium VI.

4/ Residential RBC.

5/ TC Level concentrations are in micrograms per liter (ug/L) for VOCs and SVOCs and in milligrams per liter (mg/L) for metals.



**TABLE 3-4**  
**Summary of Constituents Detected in Groundwater**  
**Samples Collected at SWMU 23 in August 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	USEPA MCL	RCRA TC Level	970818-LD- 23-GW0021	970818-LD- 23-GW0022	970818-LD- 23-GW0023	970818-LD- 23-GW0024	970819-LD- 23-GW0025D	970819-LD-23 GW9025D	970819-LD- 23-GW0025S
LAB ID			86126-2	86126-1	86126-3	86126-4	86126-7	86126-12	86126-11
SAMPLE DATE			35660	35660	35660	35660	35661	35661	35661
<b><u>Volatile Organic Compounds(ug/L)</u></b>									
Acetone	3,700 <sup>11</sup>	NS	<50	110	<50	<50	<50	<50	<50
<b><u>Semivolatile Organic Compounds(ug/L)</u></b>			ND	ND	ND	ND	ND	ND	ND
<b><u>Metals (mg/L):</u></b>									
Barium, Total	2	100	0.14	0.05	0.09	0.07	0.28	0.29	0.1
Chromium, Total	0.1	5	0.02	<0.01	0.01	0.01	0.03	0.03	<0.01
Copper, Total	1.3	NS	<0.02	<0.02	<0.02	<0.02	0.02	0.02	0.02
Nickel, Total	0.1	NS	0.02	<0.02	<0.02	0.02	0.04	0.04	<0.02
Zinc, Total	5	NS	<0.02	0.05	0.11	0.09	0.09	0.11	0.06
<b>Cyanide, Total (mg/L):</b>	0.2	NS	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

ND = Not Detected

<sup>11</sup> USEPA Region III Risk Based Concentration (RBC) for tap water, October 22, 1997

TABLE 3-5

**Summary of Constituents Detected in Groundwater Samples  
Collected at SWMUs 38 and 39 in August 1997  
Land Disposal Areas RFI  
Sloss Industries Corporation**

SAMPLE ID	USEPA MCL	RCRA TC Level	SWMU 38						
			970821-LD- 38-GW0026	970819-LD- 38-GW0027	970819-LD- 38-GW0028	970819-LD- 38-GW0029	970821-LD-38 GW0030D	970821-LD-38 GW0030S	970821-LD- 38-GW0037
LAB ID			86173-19	86173-2	86126-14	86126-13	86173-17	86173-15	86173-11
SAMPLE DATE			8/21/97	8/19/97	8/19/97	8/19/97	8/21/97	8/21/97	8/21/97
<b><u>Volatile Organic Compounds (ug/L):</u></b>									
Acetone	3,700 <sup>11</sup>	NS	120	<50	<50	<50	120	1000	<50
Benzene	5	500	13	<5	<5	<5	<5	<5	<5
Toluene	1,000	NS	7	<2	<2	<2	<2	<2	<2
Trichloroethene	5	500	<2	<2	<2	3	<2	<2	<2
Xylenes	10,000	NS	23	<5	<5	<5	<5	<5	<5
<b><u>Semivolatile Organic Compounds (mg/L):</u></b>			ND	ND	ND	ND	ND	ND	ND
<b><u>Metals (mg/L):</u></b>									
Barium, Total	2	100	0.26	0.08	0.14	0.51	0.5	0.13	0.07
Chromium, Total	0.1	5	0.02	<0.01	<0.01	<0.01	<0.01	0.01	<0.01
Copper, Total	1.3	NS	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02
Zinc, Total	5	NS	0.2	<0.02	<0.02	0.06	<0.02	0.18	0.05
Lead, Total	0.015	5	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Silver, Total	0.1	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
<b>Cyanide, Total (mg/L)</b>	<b>0.2</b>	<b>NS</b>	<b>&lt;0.02</b>	<b>&lt;0.02</b>	<b>&lt;0.02</b>	<b>&lt;0.02</b>	<b>&lt;0.02</b>	<b>&lt;0.02</b>	<b>&lt;0.02</b>

**TABLE 3-5**  
**Summary of Constituents Detected in Groundwater Samples**  
**Collected at SWMUs 38 and 39 in August 1997**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SAMPLE ID	USEPA MCL	RCRA TC Level	SWMU 39							
			970821-LD-39-GW0031	970821-LD-39-GW0032	970820-LD-39-GW0033	970821-LD-39-GW0034D	970820-LD-39-GW0034S	970820-LD-39-GW9034S	970821-LD-39-GW0035	970821-LD-39-GW0036
LAB ID			86173-13	86173-14	86173-8	86173-18	86173-6	86173-7	86173-12	86173-9
SAMPLE DATE			8/21/97	8/21/97	8/20/97	8/21/97	8/20/97	8/20/97	8/21/97	8/21/97
<b><u>Volatile Organic Compounds (ug/L):</u></b>										
Acetone	3,700 <sup>1/</sup>	NS	120	<50	<50	66	<50	<50	<50	<50
Benzene	5	500	<5	<5	<5	6	<5	<5	<5	<5
Toluene	1,000	NS	<2	<2	<2	<2	<2	<2	<2	<2
Trichloroethene	5	500	<2	<2	<2	<2	<2	<2	<2	<2
Xylenes	10,000	NS	<5	<5	<5	7	<5	<5	<5	<5
<b><u>Semivolatile Organic Compounds (mg/L):</u></b>			ND	ND	ND	ND	ND	ND	ND	ND
<b><u>Metals (mg/L):</u></b>										
Barium, Total	2	100	0.12	0.03	0.1	0.03	0.02	0.02	0.07	0.02
Chromium, Total	0.1	5	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01
Copper, Total	1.3	NS	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02
Zinc, Total	5	NS	<0.02	<0.02	<0.02	0.21	<0.02	<0.02	<0.02	0.05
Lead, Total	0.015	5	<0.025	<0.025	<0.025	0.04	<0.025	<0.025	<0.025	<0.025
Silver, Total	0.1	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.24
<b>Cyanide, Total (mg/L)</b>	<b>0.2</b>	<b>NS</b>	<b>0.03</b>	<b>0.38</b>	<b>0.14</b>	<b>&lt;0.02</b>	<b>0.21</b>	<b>0.22</b>	<b>0.07</b>	<b>&lt;0.02</b>

ND Not detected. Analytes in this group were all below their respective detection limits.  
 mg/L Milligrams per liter.  
 ug/L Micrograms per liter.

<sup>1/</sup> Source: USEPA Region III Risk Based Concentrations (RBC) for tap water, October 22, 1997

Concentration exceeds USEPA MCL.

**TABLE 3-6**  
**IDW Rock and/or Soil Cutting Characterization**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Location	Sample ID	Number of Drums	Cutting Material	Characterization			Proposed Management Practice		
				Concentration May Exceed RCRA TC Level	Concentration Exceeds USEPA RBC for Industrial Ingestion	Concentrations Do Not Exceed USEPA RBCs for Industrial Ingestion	Dispose of as Hazardous Waste	Dispose of as Contaminated Medium	Place Cuttings in Land Disposal Area at Sloss
MW-21	970822-LD-IW-SL0021	1	CL & LS			X			X
MW-29	970822-LD-IW-SL0029	1	CL, LS, SD			X			X
MW-31	970822-LD-IW-SL0031	3	LS & FD			X			X
39-SBMW32	970822-LD-IW-SL0032	1	FD	X			X		
MW-33	970822-LD-IW-SL0033	3	FD & LS	X			X		
MW-35	970822-LD-IW-SL0035	2	CL & LS		X			X	
MW-37	970822-LD-IW-SL0037	1	LS			X			X
Decon Pad	970822-LD-IW-SL9999	3	CL & V			X			X

Note: Sample 970822-LD-IW-SL0032 was collected from the drum of overburden material containerized while drilling soil boring 38-SBMW32 which is mainly sludge from SWMU 39 or flue dust.

CL - Clay

LS - Limestone

FD - Flue Dust (Sludge)

SD - Sand

V - Visquene

**TABLE 3-7**  
**IDW Soil Cutting Characterization**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

SWMU	Location Name	Sample ID	Number of Drums	Characterization		Proposed Management Practice		
				Concentration Exceeds USEPA RBC for Industrial Ingestion or Background Soil Range	Concentration Does Not Exceed USEPA RBC for Industrial Ingestion or Background Soil Range	Dispose of as Hazardous Waste	Dispose of as Contaminated Medium	Place Cuttings in Land Disposal Area at Sloss
23	MW-21	970806-LD-23-SL0021(14-16)	1		X			X
		970806-LD-23-SL0021(20-22)			X			
		970806-LD-23-SL9021(duplicate)			X			
	23-SBMW22	970806-LD-23-SL0022(0-2)	0		X			
	23-SBMW23	970806-LD-23-SL0023(12-14)	1		X			X
		970806-LD-23-SL0023(24-26)			X			
	23-SBMW24	970805-LD-23-SL0024(7-9)	1		X		X	
		970805-LD-23-SL0024(14-16)		X				
	23-SBMW25	970805-LD-23-SL0025(19-21)	1		X			X
38	38-SBMW26	970804-LD-38-SL0026(10-12)	1		X			X
		970804-LD-38-SL9026 (duplicate)			X			
		970804-LD-38-SL0026(18-20)			X			
	38-SBMW27	970805-LD-38-SL0027(22-24)	2		X			X
		970808-LD-38-SL0027(22-24) <sup>1/</sup>			X			
		970805-LD-38-SL0027(11-13)			X			
	38-SBMW28	970807-LD-38-SL0028(8-10)	2		X			X
		970807-LD-38-SL0028(13-15)			X			
	MW-29	970807-LD-38-SL0029(15-17)	1		X		X	
		970807-LD-38-SL0029(19-21)		X				
	38-SBMW30	970807-LD-38-SL0030(9-11)	1		X			X
		970807-LD-38-SL0030(17-19)			X			
	MW-31	Soil samples were not collected.						
	MW-37	970808-LD-38-SL0037(4-6)	1		X			X
		970808-LD-38-SL0037(8-10)			X			
39	39-SBMW32	Soil samples were not collected.						
	MW-33	970808-LD-39-SL0033(11-13)	1		X			X
	39-SBMW34	970805-LD-39-SL0034(10-12)	2		X			X
		970808-LD-39-SL0034(10-12) <sup>1/</sup>			X			
	MW-35	970808-LD-39-SL0035(10-12)	2 <sup>2/</sup>		X			
	39-SBMW36	970804-LD-39-SL0036(5-7)	1		X			X
		970804-LD-39-SL9036 (duplicate)			X			
		970804-LD-39-SL0036(10-12)			X			

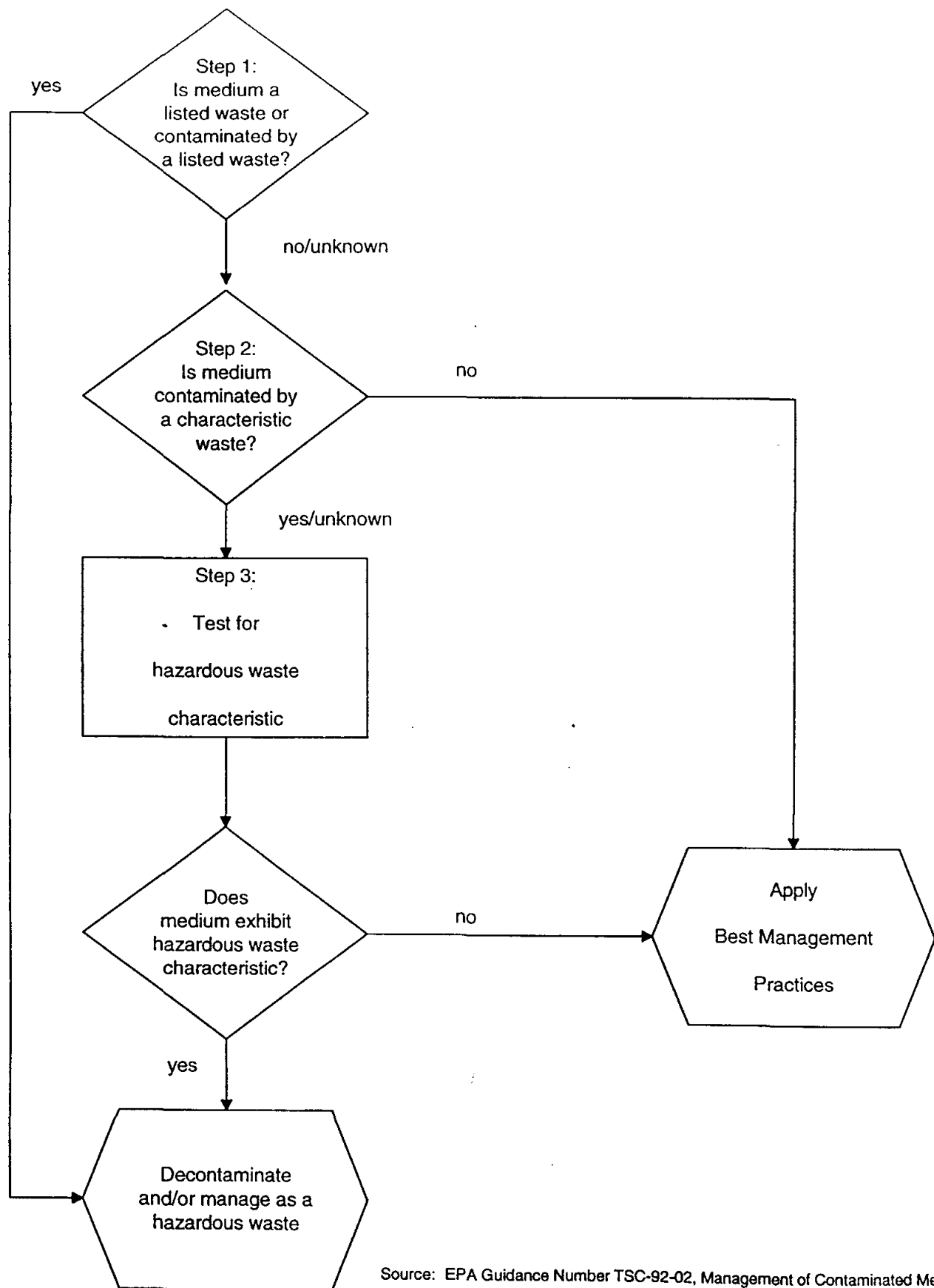
<sup>1/</sup> VOC sample was recollected because sample bottle was broken during shipment.

<sup>2/</sup> Soil cuttings and rock cuttings were mixed so soil data could not be used to characterize drums. See Table 3-6.

**TABLE 3-8**  
**IDW Purge Water Characterization**  
**Land Disposal Areas RFI**  
**Sloss Industries Corporation**

Location	Sample ID	Number of Drums	Characterization		Proposed Management Practice		
			Concentration Exceeds USEPA MCL or RBCs for Tap Water	Concentrations Do Not Exceed USEPA MCLs or RBCs for Tap Water	Dispose of as Hazardous Waste	Dispose of as Contaminated Medium	Dispose of Purge Water at BTF
MW-21	970818-LD-23-GW0021	2		X			X
MW-22	970818-LD-23-GW0022	1		X			X
MW-23	970818-LD-23-GW0023	1		X			X
MW-24	970818-LD-23-GW0024	1		X			X
MW-25D	970819-LD-23-GW0025D	1		X			X
MW-25S	970819-LD-23-GW0025S	1		X			X
MW-26	970821-LD-38-GW0026	1	X			X	
MW-27	970819-LD-38-GW0027	1		X			X
MW-28	970819-LD-38-GW0028	1		X			X
MW-29	970819-LD-38-GW0029	2		X			X
MW-30D	970821-LD-38-GW0030D	1		X			X
MW-30S	970821-LD-38-GW0030S	1		X			X
MW-31	970821-LD-39-GW0031	2		X			X
MW-32	970821-LD-39-GW0032	1	X			X	
MW-33	970820-LD-39-GW0033	3		X			X
MW-34S	970820-LD-39-GW0034S	1	X			X	
MW-34D	970821-LD-39-GW0034D	1	X			X	
MW-35	970821-LD-39-GW0035	1		X			X
MW-36	970821-LD-39-GW0036	2	X			X	
MW-37	970821-LD-38-GW0037	3		X			X

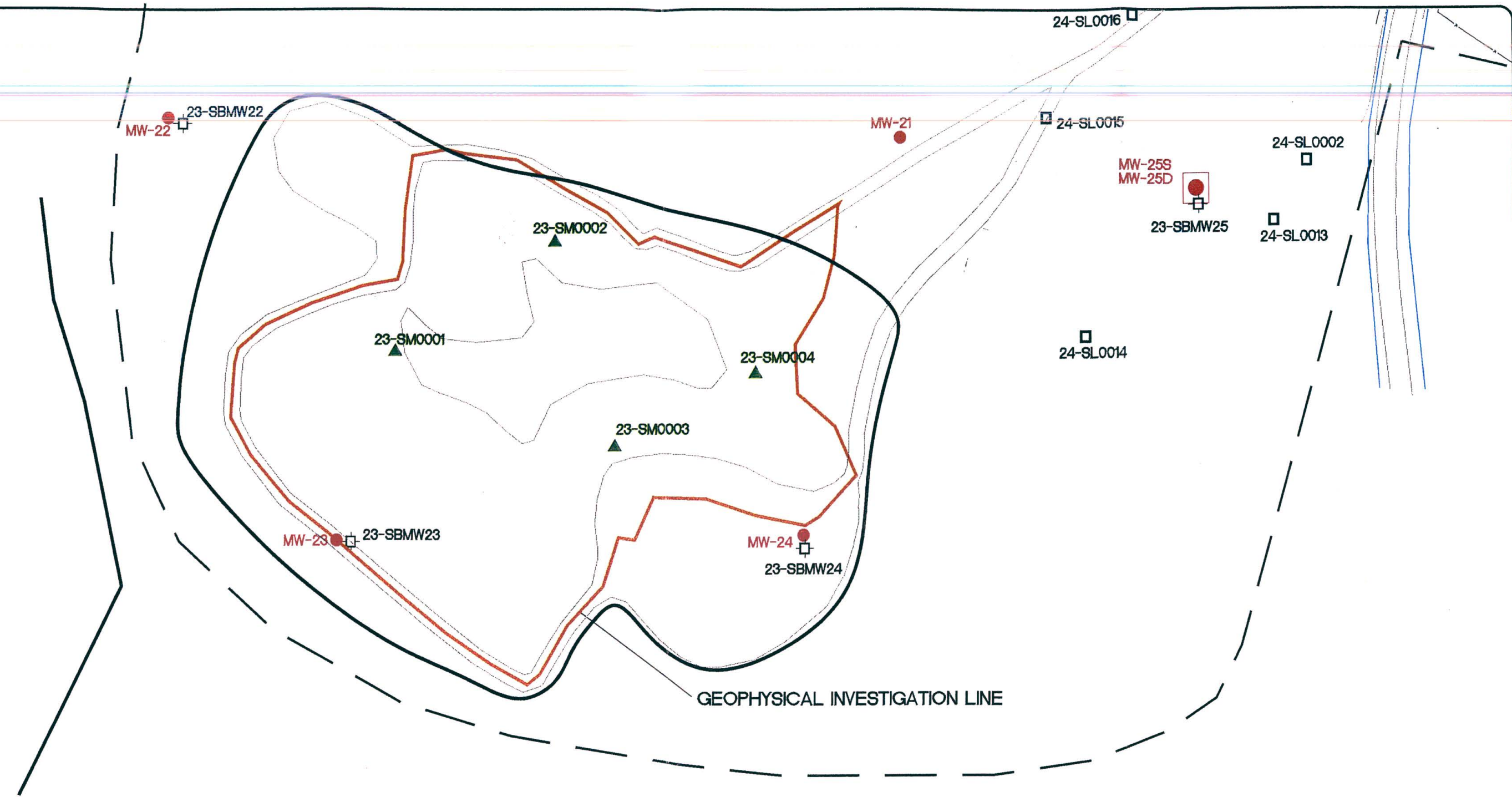
## **FIGURES**



Source: EPA Guidance Number TSC-92-02, Management of Contaminated Media



DWG DATE: 12/5/97 | PRJCT NO.: TF0320.013 | FILE NO.: SLOSS | DRAWING: SLO-S10.DWG | CHECKED: KT | APPROVED: PF | DRAFTER: B.H.



**LEGEND**

	EXISTING RAILROADS		24-SM0003	SLUDGE SAMPLE LOCATION
	EXISTING ROADS		24-SL0014	SURFICIAL SOIL SAMPLING LOCATION
	PROPERTY BOUNDARY		23-SBMW24	SOIL BORING LOCATION
	SWMU BOUNDARY		MW-25	MONITOR WELL COUPLET
	GEOPHYSICAL INVESTIGATION LINE		MW-22	MONITOR WELL LOCATION
	STORM-WATER DRAINAGE DITCH			



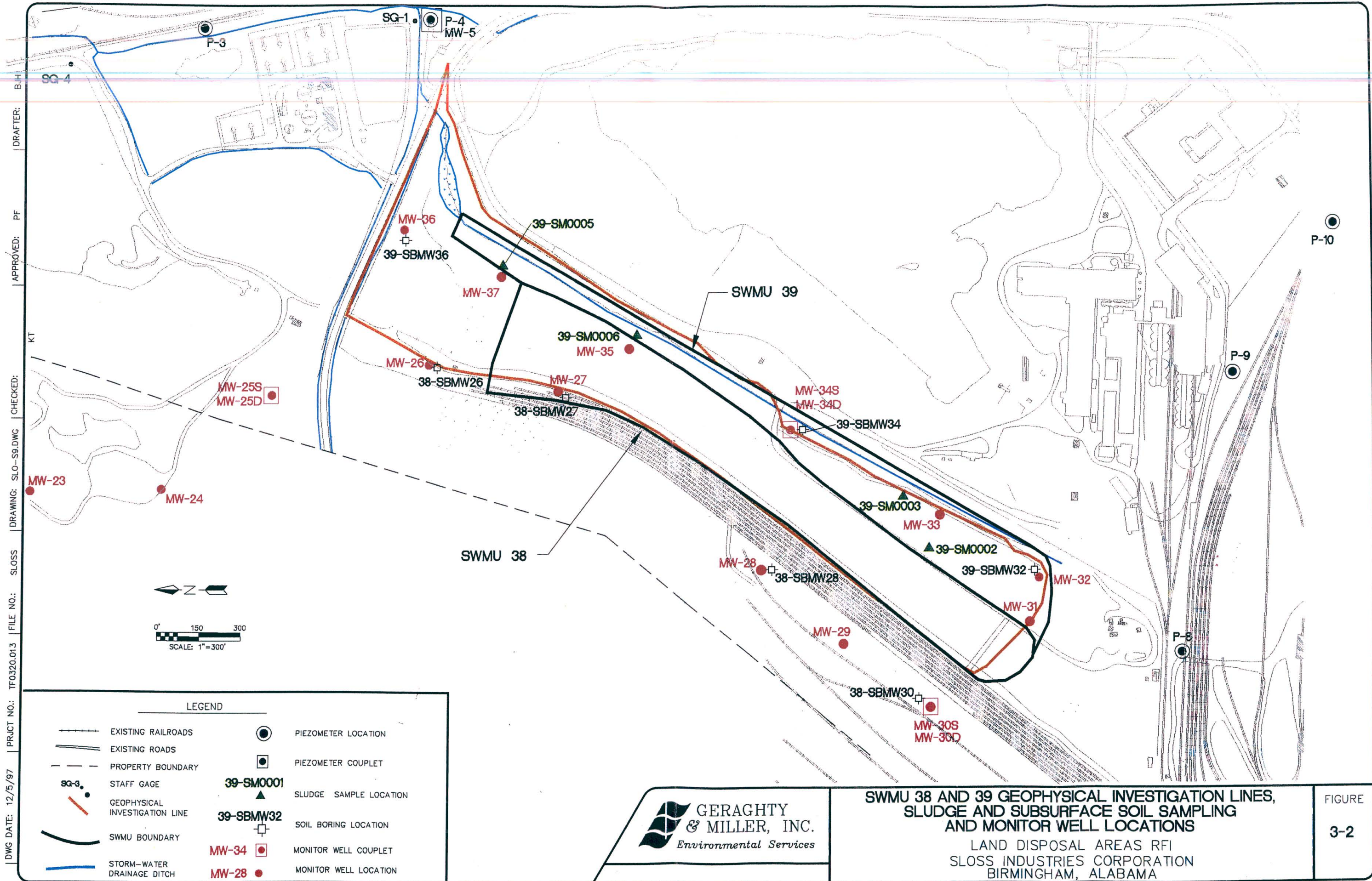
**SWMU 23 GEOPHYSICAL INVESTIGATION LINES, SLUDGE AND SUBSURFACE SOIL SAMPLING AND MONITOR WELL LOCATIONS**

LAND DISPOSAL AREAS RFI  
SLOSS INDUSTRIES CORPORATION  
BIRMINGHAM, ALABAMA



FIGURE  
3-1





**SWMU 38 AND 39 GEOPHYSICAL INVESTIGATION LINES,  
SLUDGE AND SUBSURFACE SOIL SAMPLING  
AND MONITOR WELL LOCATIONS**

LAND DISPOSAL AREAS RFI  
SLOSS INDUSTRIES CORPORATION  
BIRMINGHAM, ALABAMA

**APPENDIX A**

**USEPA GUIDANCE NUMBER TSC-92-02  
MANAGEMENT OF CONTAMINATED MEDIA**





## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

## REGION IV

340 COURTLAND STREET, N.E.  
ATLANTA, GEORGIA 30365MEMORANDUM

DATE: DEC 28 1992

SUBJECT: Guidance Number TSC-92-02  
Management of Contaminated MediaFROM: G. Alan Farmer  
Chief, RCRA Branch

A handwritten signature of G. Alan Farmer is written over the typed name and title.

TO: Addressees

Attached please find final guidance developed by the EPA Region IV RCRA Technical Screening Committee regarding management of contaminated groundwater, surface water and soils. This guidance expands upon the existing "contained-in" policy and also addresses management of environmental media exhibiting a hazardous characteristic.

This guidance should be followed by EPA Region IV staff and all others who actively manage contaminated environmental media within Region IV during any of the following RCRA activities:

- Corrective actions;
- Site investigations;
- Clean up of hazardous waste spills; and
- Closure of RCRA treatment, storage or disposal units.

In addition, this guidance represents an interpretation of RCRA regulations and as such should be considered in evaluating ARARS for CERCLA activities.

The Technical Screening Committee would like to thank everyone who commented on the draft for their contributions to the guidance.

Attachment

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## Addressees:

Region IV RCRA Branch Personnel  
Region IV State Directors  
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EPA REGION IV RCRA GUIDANCE:  
MANAGEMENT OF CONTAMINATED MEDIA  
Guidance Number TSC-92-02  
August 1992

## I. Introduction

On several previous occasions, EPA has issued directives and guidance addressing the regulatory status and proper disposition of contaminated environmental media under the Resource Conservation and Recovery Act (RCRA). However, Region IV continues to receive inquiries from the States and the regulated community requesting more detailed guidance on this subject. This document explains how to properly manage contaminated environmental media (i.e., groundwater, surface water, soils and sediments) during routine field work at hazardous waste sites.

It is important to emphasize that this guidance is only intended to be an interpretation of RCRA regulations. Nothing in this guidance is intended to change or supersede actual RCRA regulatory requirements. Several anticipated rulemakings relate to this guidance, including the Land Disposal Restrictions for Contaminated Soil and Debris and the Hazardous Waste Identification Rule. If any provisions of these future RCRA regulations are in conflict with this guidance, the regulations (once final) will take precedent. <sup>1/</sup>

## II. Scope and Applicability

This guidance sets forth procedures for the proper management of contaminated environmental media produced and/or managed during the investigation and remediation of hazardous waste sites. Contaminated media should be managed in accordance with this guidance whenever hazardous constituents are present above levels of human health or environmental concern.

This guidance applies to contaminated media generated during the following RCRA activities:

1. corrective actions;
2. site investigations;
3. clean up of spills of listed or characteristic hazardous waste;  
and
4. closure of RCRA treatment, storage, or disposal units.

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<sup>1/</sup> The policies and procedures established in this document are intended solely for the guidance of employees of the U.S. Environmental Protection Agency. They are not intended and cannot be relied upon to create any rights, substantive or procedural, enforceable by any party in litigation with the the United States. EPA reserves the right to act at variance with these policies and procedures and to change them at any time without public notice.

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The procedures and management practices set forth in this guidance should be followed by EPA Region IV and all others who actively manage contaminated media at sites within the Region, regardless of whether such management activities are voluntary or carried out in response to EPA regulations or directives.

### III. Background

The regulatory status of contaminated groundwater was first specifically addressed in a December 26, 1984, memorandum from John Skinner, Director of the Office of Solid Waste to James Scarbrough, Region IV Residuals Management Branch Chief. In that memorandum, Skinner noted that contaminated groundwater that is "collected" and derived from listed wastes or hazardous by characteristic is a hazardous waste and subject to Subtitle C regulations.

A November 13, 1986, memorandum from Marcia Williams, Director of the Office of Solid Waste to Patrick Tobin, Region IV Waste Management Division Director attempted to more precisely explain the EPA position on contaminated groundwater presented by Skinner. The Williams memorandum explained what is now referred to as the "contained-in" policy. Williams stated that groundwater in an aquifer is not a solid waste and thus not a hazardous waste, but that groundwater contaminated with hazardous waste leachate is subject to RCRA Subtitle C regulations because it "contains" a hazardous waste and therefore must be managed as if the groundwater itself was hazardous. However, if groundwater is treated such that it no longer contains a hazardous waste, the groundwater would no longer be subject to regulation under Subtitle C of RCRA.

Subsequent to the 1986 Williams memorandum, the scope of the "contained-in" policy has been applied to contaminated soil, debris, and leachate. For example, in the Land Disposal Restrictions (LDR) First Third Final Rule (53 FR 31142) the Agency clarified the applicability of the LDR treatment standards to residues from types of management other than treatment. <sup>2/</sup> Examples cited by EPA are contaminated soil or leachate derived from managing the waste. EPA stated: "In these cases, the mixture is deemed to be the listed waste, either because of the derived-from rule, the mixture rule (40 CFR §261.3(a)(2)(iv)), or because the listed waste is contained in the matrix...". <sup>3/</sup>

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<sup>2/</sup> Residuals from treatment of listed hazardous waste have always been considered hazardous waste by application of the derived-from rule (40 CFR §261.3(c)(2)(i)).

<sup>3/</sup> The reference to contaminated soil and leachate as "the mixture" does not mean that contaminated medium is considered hazardous waste by application of the mixture rule. However, the contained-in policy is, in fact, analogous to the mixture rule, involving mixtures of hazardous

(continued. . . )

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In a June 19, 1989, letter to Thomas C. Jorling, Commissioner of the New York Department of Environmental Conservation from Jonathan Cannon, Acting Assistant Administrator, EPA reiterated the basis for EPA's authority to regulate contaminated environmental media under Subtitle C of RCRA. Referring to the "mixture" rule and "derived-from" rule, Cannon states

...However, these two rules do not pertain to contaminated environmental media. Under our regulations, contaminated media are not considered solid wastes in the sense of being abandoned, recycled, or inherently waste-like as those terms are defined in the regulations. Therefore, contaminated environmental media cannot be considered a hazardous waste via the "mixture" rule (i.e., to have a hazardous waste mixture, a hazardous waste must be mixed with a solid waste per 40 CFR §261.3(a)(2)(iv)). Similarly, the "derived-from" rule does not apply to contaminated media. Our basis for stating that contaminated environmental media must be managed as hazardous waste is that they "contain" listed hazardous waste. These environmental media must be managed as hazardous waste because and only so long as, they "contain" a listed hazardous waste (i.e., until decontaminated).

#### IV. Regional Interpretation

All currently available EPA policy pertains to environmental media known to be contaminated with a listed hazardous waste. These documents collectively make up the "contained-in" policy. However, the "contained-in" policy does not address contamination from characteristic hazardous waste. Furthermore, in practice there are many times where there is no clear documentation that an environmental medium was contaminated by either a listed or characteristic hazardous waste (as is often the case at solid waste management units). Because we routinely encounter contaminated media situations beyond the scope of the traditional "contained-in" policy, it is appropriate to clarify by establishing a general definition of "contaminated" media.

EPA Region IV has established that the criteria used to determine if media requires controlled management is based upon human health and environmental risk. By definition a medium is "contaminated" if one or more hazardous constituents, as identified in 40 CFR Part 261 Appendix VIII, are present above levels of human health or environmental concern and above naturally occurring (background) levels (this is specifically for areas where there are naturally occurring high levels of Appendix VIII constituents). Contaminated environmental media should either be managed in accordance with RCRA Subtitle C requirements or "best management

3/(continued. . . )

waste and non-waste materials while the mixture rule governs mixtures of hazardous and solid waste. The mixture rule has been codified, but the interpretive contained-in policy has the same regulatory effect. The interpretation that media containing hazardous waste must be regulated as hazardous waste was upheld in Chemical Waste Management v. U.S. EPA, 869 F.2d 1526, 1540 (D.C. Cir. 1989).



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practices" as specified in Section V of this guidance. However, if a contaminated medium is treated to at or below risk-based standards (or to naturally occurring background levels), it can be rendered "decontaminated."

Risk-based levels for hazardous constituents should be derived on a site-specific basis with the aid of a toxicologist (and an ecologist, where appropriate). It is not possible or appropriate for the Region to establish generic "de minimis" levels for constituents absent a new rulemaking. Human health protection limits should be calculated using reference toxicity values for cancer and noncancer effects (i.e., carcinogenic potency factors (CPFs) and reference doses (RfDs), respectively), and exposure rate and route assumptions appropriate to site conditions. Consideration of contaminant attenuation is not an appropriate substitute for direct exposure assumptions in determining decontamination levels for environmental media. This is because a decontaminated medium under this guidance is not subject to controlled management (as opposed to non-hazardous or delisted solid waste, which under Subtitle D of RCRA remains subject to regulatory control). However, consideration of fate and transport for possible leaching to groundwater is necessary to ensure that a contaminated soil is treated to below risk-based standards for all exposure pathways. The RCRA RFI Guidance and the CERCLA Risk Assessment Guidance (RAG) should be consulted for further explanation on risk evaluations.

Once an environmental medium is determined to be "contaminated", knowledge of how the medium became contaminated dictates how that medium must be managed. The attached decision matrix is provided to assist the user in making the correct regulatory decision for management of contaminated media. A contaminated medium must ultimately be managed one of two ways: 1) as if it were a hazardous waste, or 2) in accordance with "best management practices." The discussion below explains the decision matrix logic.

A medium contaminated by listed hazardous waste clearly falls within the scope of the "contained-in" policy (Step 1 on the decision matrix). As established in Section III, the listed hazardous waste is "contained-in" the medium. The P- and U- waste listings represent a special situation whereby contaminated media are listed hazardous wastes. As stated in 40 CFR §261.33(d):

Any residues or contaminated soil, water or other debris resulting from the cleanup of a spill into or on the land or water of any commercial chemical product or manufacturing chemical intermediate having the generic name listed in paragraph (e) or (f) of this section, or any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill, into or on the land of any off-specification chemical product and would have the generic name listed in paragraph (e) or (f) of this section.

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Those contaminated media are P- and U-listed hazardous wastes and are subject to all RCRA requirements. Although contaminated soil, water or other debris are considered hazardous wastes under this listing, if they are decontaminated, they no longer meet the listing and therefore are not a listed hazardous waste nor do they "contain" a listed hazardous waste.

Both contaminated media which are themselves listed hazardous wastes (P- and U-listed wastes) and media which "contain" listed hazardous waste must be managed in accordance with Subtitle C regulations. Once a medium is decontaminated such that it no longer is a listed hazardous waste (P- and U-listed wastes) or no longer "contains" the listed hazardous waste, then Subtitle C ceases to apply.

Another way in which media may become "contaminated" is through contact with a characteristic hazardous waste (Step 2 on the decision matrix). If it can be validated that the medium was not contaminated by a characteristic hazardous waste, then the medium may be managed in accordance with best management practices. However, if knowledge of the originating waste stream indicates that contamination did result from a characteristic hazardous waste, or if the source of contamination is unknown, then the medium must be tested to determine whether it exhibits a hazardous waste characteristic (Step 3 on the decision matrix).

Any medium exhibiting a hazardous waste characteristic must be managed in accordance with Subtitle C regulations until it no longer exhibits the characteristic. If the medium is found not to exhibit a hazardous characteristic but is still "contaminated", it must be managed according to best management practices.

In summary, there are two key points to note when using the decision matrix. Contaminated media which are themselves hazardous wastes (P- and U-listed wastes), media which exhibit a hazardous waste characteristic, and media which "contain" listed hazardous waste must be managed in accordance with Subtitle C regulations. Where documentation does not exist to confirm that the contamination source (or the medium of interest, in the case of P- and U-listed wastes) is listed waste and the medium does not exhibit a hazardous waste characteristic, best management practices should be applied.

The management scenarios described above apply to a contaminated medium until such medium is decontaminated. Decontamination is required for all Appendix VIII constituents which are above health-based limits and background, not merely the Appendix VIII constituent for which the waste was listed or which caused the medium to exhibit a hazardous characteristic. All RCRA investigation and corrective action plans submitted to EPA Region IV for review and approval should include a sampling and analysis protocol for verifying that a medium has been decontaminated if treatment is to occur on-site. Sampling frequency for verifying decontamination will depend on a number of site-specific factors, such as the source of the contaminated medium, nature, extent and degree of contamination, and type of treatment. As an example, for small

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amounts of contaminated media (soil samples, drill cuttings, well purge water, etc.), testing of each drum or batch might provide adequate verification of decontamination. However, for large scale remediation of groundwater, periodic sampling might be appropriate. Chapter 9 of SW-846 provides more specific information regarding appropriate sampling procedures and frequencies.

A more detailed discussion of what "subject to Subtitle C regulations" means is provided in Section VI. Best management practices will be defined for each situation as part of the review process for sampling, investigation and corrective action plans. Some examples of best management practices are provided in Section V.B.

#### V. Management Procedures

This portion of the guidance contains several sub-sections which provide specific guidance for managing contaminated media under several common scenarios encountered at hazardous waste sites. This guidance provides the user with a high degree of flexibility to make site-specific management decisions. It also encourages the user to take full advantage of variances and exemptions provided for under RCRA.

##### A. RCRA Corrective Actions

Any contaminated medium containing a listed hazardous waste that is actively managed under a corrective action is subject to Subtitle C requirements. Any unit used for the treatment, storage, or disposal of such medium is also subject to Subtitle C requirements (see Section VI regarding applicability of Subtitle C requirements).

Any medium contaminated with a characteristic hazardous waste must be tested to determine if the medium exhibits any hazardous characteristics. If the medium does exhibit a hazardous characteristic, it is subject to Subtitle C requirements. Any unit used for the treatment, storage, or disposal of such medium is also subject to Subtitle C. A medium that does not exhibit a characteristic, or is treated such that it does not exhibit a characteristic, but is by definition contaminated, is subject to best management practices, but is not subject to Subtitle C requirements.

Treatment of a contaminated medium, whether it is from a listed or characteristic hazardous waste, may yield a decontaminated medium component and one or more waste components. The decontaminated medium component is not subject to RCRA Subtitle C, but may be subject to State and Local requirements, RCRA Subtitle D, and best management practices. The waste component is subject to RCRA Subtitle C requirements if it exhibits a hazardous waste characteristic or resulted from treatment of media containing a listed hazardous waste. Otherwise, disposal of the waste component is subject to State and Local requirements.

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For corrective action purposes, a "no action" alternative should not be selected for a medium that is considered "contaminated", because that medium is still a health and environmental hazard until it is decontaminated.

#### B. Site Investigation Residues

If it has been determined that the environmental medium to be sampled is itself a hazardous waste (P- and U-listed wastes), exhibits a hazardous waste characteristic or "contains" a listed hazardous waste, then Subtitle C requirements apply to the residues (purge water, drill cuttings, drilling fluids, etc.) that are generated during the sampling event. These residues must be containerized and/or treated and disposed in a manner that is in compliance with Subtitle C of RCRA.

An issue of particular concern is the applicability of land disposal restrictions (LDRs) to site investigation residues. "Land disposal" occurs when hazardous wastes (or contaminated media subject to Subtitle C) are consolidated from different units into one unit, when media are moved outside the unit (for treatment or storage) and returned to the unit, or when media are excavated, placed in a separate waste management unit (such as an incinerator or tank within the unit), and redeposited in the unit.

The Agency has developed guidance which addresses the applicability of RCRA LDRs to contaminated residues generated during Superfund site investigations. The CERCLA Guide to Management of Investigation-Derived Waste (OSWER Directive 9345.3-03fs) states that storing investigation-derived waste (IDW) in containers within the Area of Contamination (AOC), and then returning it to its source does not trigger LDR treatment standards as long as the containers are not managed in a such a manner as to constitute a "hazardous waste management unit" as defined in 40 CFR §260.10.<sup>4/</sup> In addition, sampling and direct replacement of wastes within an AOC do not constitute land disposal. It must be emphasized that direct replacement of contaminated media can only occur within an AOC. Contaminated residue outside of the AOC should be containerized and/or treated and disposed in compliance with Subtitle C of RCRA.

The proposed RCRA 40 CFR Part 264 Subpart S rules contain provisions for a corrective action management unit (CAMU), the RCRA analog to the CERCLA AOC. In an August 1992 guidance entitled "Use of the Corrective Management Unit Concept", EPA provided clarification regarding use of the CAMU concept prior to finalization of the

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<sup>4/</sup> An April 16, 1991, memorandum from Caroline M. Wehling, Attorney, Solid Waste and Emergency Response, to Steven C. Golian, Chief, Remedial Guidance Section, establishes that EPA does not generally consider drums placed within a landfill to form "container storage areas". Thus, if waste is placed into drums which remain in the AOC and which are not placed into a separate storage or treatment area, such placement would not be considered a unit distinct from the landfill itself.



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Subpart C regulations. In this guidance, the Regions were advised that the CAMU concept may be used in some situations to allow designation of an area of broad contamination as a single unit for purposes of determining what RCRA management standards apply. Thus, if the CAMU concept can be used in accordance with the August 1992 guidance to the same extent that the Agency describes a Superfund AOC, then the OSMER Directive 9345.3-03RS interpretation of what constitutes land disposal can also be applied to RCRA site investigation residues.

When sampling in areas or zones of suspected contamination where documentation does not exist to confirm that the contamination source was a listed hazardous waste, residues should be containerized until test results are available to determine whether the residue exhibits a characteristic. If the medium does not exhibit a hazardous waste characteristic, then subtitle C regulations do not apply but the environmental sampling residues should still be managed in a manner that is protective of human health and the environment (i.e., best management practices). Best management practices should be followed any time that test results indicate residues contain hazardous constituents above a health or environmental based limit (but the residues do not exhibit a hazardous characteristic and the contamination source was not a listed waste). Best management practices suggest that contaminated sampling residues be treated or disposed in a unit that is operated in accordance with an environmental permit (e.g., NPDES, VIC, RCRA, or State solid waste management). If treatment or disposal in a permitted unit at the facility is not an available option, then the residues may be sent to an approved off-site facility for treatment or disposal. Alternatively, the residues may be stored in a secure location at the facility until the waste site under investigation is remediated. The residues should then be included in the remediation process.

It is recommended that the amount of residues generated during a sampling event be minimized (e.g., if possible, conduct pump tests in areas outside the plume of contamination). Residues that are not expected to be contaminated should not be mixed with contaminated residues (e.g., drill cuttings removed from above the water table in an area with no surface soil contamination should not be mixed with cuttings removed from below the water table).

All sampling plans that are submitted to the Region IV RCRA program for review and approval should contain procedures that detail how residues will be managed in compliance with this guidance.

#### C. Hazardous Waste Spills

EPA has developed a straightforward approach for assessing the regulatory status of spilled hazardous wastes. The approach is based on the premise that "a spill of hazardous material to soil or groundwater is normally a simple act of disposal" (55 FR 22671), or, put more simply, a spill constitutes disposal.

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Under this approach, the spill of a hazardous waste constitutes "unpermitted" disposal of hazardous waste. The Agency recognizes the need for prompt action in response to a spill, and has provided that cleanup need not be done under a RCRA permit, provided it is done expeditiously and in an environmentally sound manner (see 40 CFR §264.1(g)(8) and 40 CFR §265.1(o)(11)).

EPA regulations have been promulgated for certain "spill" scenarios, due to the nature of certain kinds of waste. 40 CFR §261.33(d) identifies how the cleanup residues from a spill of P- and U-listed chemical products must be managed. In summary, it says that the residue or contaminated debris (including soil and water) from the cleanup of a spill of P- or U-listed chemical product is a hazardous waste when discarded (or when intended to be discarded). The residues from spills of P- and K-listed wastes and characteristic wastes should be managed in accordance with the procedures set forth in Section IV of this document.

When a spilled material is recycled or able to be recycled, the RCRA recycling regulations may exempt it from any other hazardous waste regulations. But the difficulty of recycling spill residues in such matrices as soil and groundwater indicates that a simple assertion of intent to recycle is not sufficient to claim a recycling exemption from regulation. Therefore, EPA asserts that the burden of proof for recycling remains on the generator.

In 55 FR 22671, EPA identifies five objective considerations for the regulator to apply in reviewing a recycling assertion, namely:

1. whether the generator has begun to recycle the spill;
2. the length of time the spill residue has existed;
3. the value of the spilled material;
4. whether it is technically feasible or practical to recycle the spill; and
5. whether there is any history of the company recycling this type of spill residue.

Other considerations may apply in site-specific cases.

#### D. RCRA Closures

In closing a RCRA regulated land-based unit, a facility has two options: "clean closure" or leaving the waste and waste residues in place and conducting post-closure care. To clean close, a facility must remove or decontaminate all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste and leachate.

The regulations are not clear regarding management of contaminated subsoils or other environmental media that are removed to achieve clean closure. Specifically, the closure regulations do not

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distinguish between contaminated media, which is not a solid waste, and other contaminated materials, which could be solid waste. The regulations at 40 CFR §§265.197, 265.228, 265.258, 265.280 and 265.310 (and the corresponding permit standards in 40 CFR Part 264) all state that removed contaminated soils <sup>5/</sup> must be managed as a hazardous waste unless 40 CFR §261.3(d) applies. 40 CFR §261.3(d), which provides for delisting and demonstration of absence of hazardous waste characteristic, only refers to solid waste. Although soils and groundwater are not solid waste, the Region extends the provision for the demonstration of absence of characteristic in 40 CFR §261.3(d) to environmental media.

This interpretation is valid in that it is not appropriate to apply more stringent standards to environmental media than to solid wastes. In addition, although a contaminated medium is not itself a solid waste, the contamination within the medium is a solid waste and 40 CFR §261.3(d) clearly applies. Therefore, contaminated media from RCRA closures must be managed as if they are hazardous wastes and must meet Subtitle C requirements as long as they contain a listed waste or exhibit a hazardous waste characteristic. If a medium does not exhibit a hazardous waste characteristic, best management practices apply.

The treatment of a contaminated medium may yield a decontaminated medium component and one or more waste components. The decontaminated medium component is not subject to RCRA Subtitle C. The waste component remains subject to Subtitle C unless and until 40 CFR §261.3(d) applies.

#### VI. Subtitle C Requirements

Sections IV and V of this guidance define "contaminated" media and establish which categories of contaminated media are subject to Subtitle C requirements. In summary, Subtitle C requirements apply to active management of any medium which is itself a hazardous waste (P- and U-listed waste), any medium which "contains" a listed hazardous waste, and any medium which exhibits a hazardous waste characteristic.

It is not possible for one guidance to examine all of the Subtitle C requirements which might apply to management of contaminated media.

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<sup>5/</sup> As clarified in 52 FR 0703, the Agency interprets the term "soil" broadly to include both unsaturated soils and soils containing groundwater. Uncontaminated groundwater is therefore a requirement for clean closure.

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However, once the determination is made that the contaminated medium is subject to Subtitle C requirements, then the applicable Subtitle C requirements are the same as if that medium were in fact a hazardous waste. Thus, it is necessary to consider how the medium is being managed in determining which Subtitle C requirements would apply.

One of the most commonly asked questions is whether management of contaminated media requires a permit, especially if a contaminated medium is being managed as a result of corrective action under RCRA §3004(u), §3004(v) and §3008(h). To address this question, Region IV conducted a legal analysis of the RCRA regulations and corrective action legislative history. In summary, if the source of contamination renders media "subject to subtitle C requirements" as explained in this guidance, and if the conduct of corrective action under RCRA §3004(u), §3004(v) or §3008(h) includes a storage, treatment or disposal activity that ordinarily requires a permit, such permit <sup>6/</sup> must be obtained. While this requirement will undoubtedly retard the corrective action process, it is inescapable absent rulemaking relief.

It is important to remember that RCRA subtitle C standards include a number of waivers and conditional exemptions which can be applied to contaminated media (just as they are applied to hazardous waste). For example, if air stripping of contaminated groundwater occurs in a wastewater treatment unit subject to §402 or §307(b) of the Clean Water Act, and the unit also meets the RCRA definition of a tank or tank system, the treatment would not require a RCRA permit (40 CFR §264.1(g)(6)). Furthermore, the air stripping operation would not be subject to the Subpart AA air emission standards standards <sup>7/</sup> (45 FR 25456). As another example, 40 CFR §261.4(b)(10) exempts from the definition of hazardous waste petroleum-contaminated media and debris that fail the test for Toxicity Characteristic and are subject to corrective action regulations under 40 CFR Part 280. The user of this guidance is encouraged to take full advantage of these and all other RCRA waivers and exemptions to expedite corrective action.

#### VII. Decision Matrix for Management of Contaminated Media

A decision matrix has been provided to assist the user in making the correct regulatory decision for management of contaminated media. There are two key points to note when using the decision matrix. Contaminated

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<sup>6/</sup> Depending on whether the facility already has permit or has interim status, a permit modification under 40 CFR §270.41 or 40 CFR §270.42, or change in interim status under 40 CFR §270.72 would be appropriate.

<sup>7/</sup> Nevertheless, corrective action authorities should be used to ensure that the air emissions will not pose a threat to human health and the environment.



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media which are themselves hazardous wastes (P- and U-listed wastes), and media which exhibit a hazardous waste characteristic or which "contain" a listed hazardous waste must be managed in accordance with Subtitle C regulations. Where documentation does not exist to confirm that the contamination source (or the medium of interest) in the case of P- and U-listed wastes) is a listed waste and the medium does not exhibit a hazardous waste characteristic, best management practices may be applied.

#### VIII. Relation to CERCLA Activities

Contaminated environmental media may be generated or actively managed during CERCLA investigations, remedial actions and response actions. The National Contingency Plan (NCP) requires that for all remedial actions, the selected remedy must attain or exceed the applicable or relevant and appropriate requirements (ARARS) in environmental laws. It also requires removal actions to attain ARARS to the greatest extent practicable, considering the exigencies of the circumstances. This guidance is an interpretation of RCRA regulations and as such should be considered in evaluating ARARS for CERCLA activities.

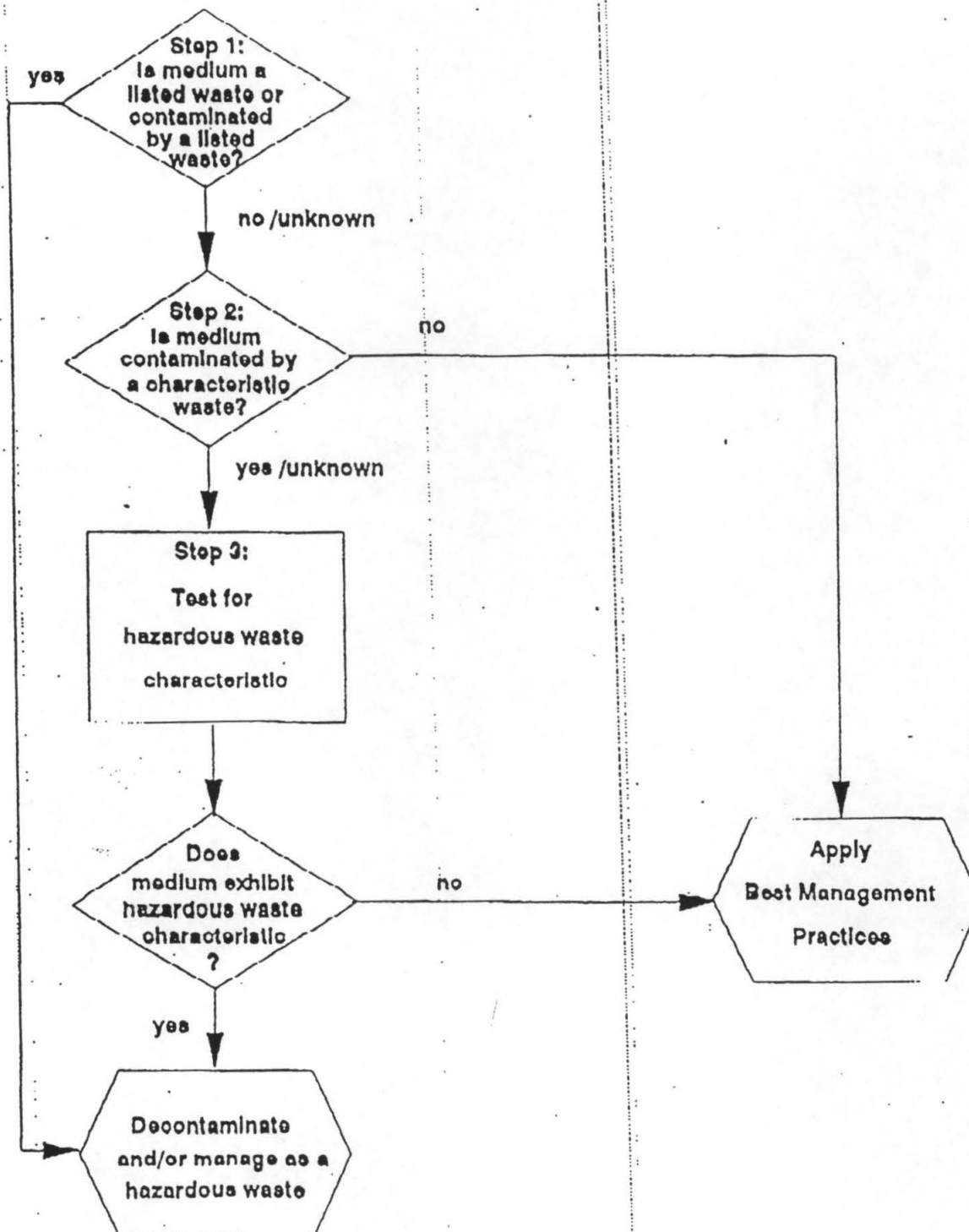
When implementing this guidance into CERCLA activities, the user is encouraged to take full advantage of all waivers and exemptions provided under either RCRA or CERCLA. For example, CERCLA section 121(e) establishes that a RCRA permit is not required for any CERCLA removal and remedial actions conducted entirely on-site at NPL sites. OSWER Policy Directive #9522.00-2 extends this permit waiver authority to uncontrolled sites <sup>B/</sup> if the state has adopted equivalent language to CERCLA section 121(e).

In summary, this guidance represents an interpretation of RCRA regulations, directives and policy. Incorporation of this guidance into CERCLA activities should be evaluated similarly to any other RCRA ARAR.

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<sup>B/</sup> "Uncontrolled sites" are those hazardous waste sites which are being handled by the State's equivalent to the Superfund program.

## DECISION MATRIX FOR MANAGING CONTAMINATED MEDIA



## **APPENDIX B**

### **USEPA RISK-BASED CONCENTRATIONS**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region III  
841 Chestnut Street  
Philadelphia, Pennsylvania 19107

October 22, 1997

SUBJECT: Risk-Based Concentration Table

FROM: Eric W. Johnson, Chief  
Technical Support Section (3HW41)

TO: RBC Table Recipients

Attached is the EPA Region III Risk-Based Concentration (RBC) table, which we distribute periodically to all interested parties.

*IMPORTANT MESSAGE*

*EPA Region III's Internet website now includes the RBC Table as a readable file for on-screen use and as "zipped" files, in Lotus and Excel. These can be found at <http://www.epa.gov/reg3hwmd/riskmenu.htm>. (Once there, I suggest you set a bookmark to ease future access.) The cover memo and background information are also included in both formats.*

*We encourage all RBC Table users with Internet access to obtain the table electronically rather than on paper. In this way, users can access the most current RBC table immediately in a form that can be used directly for comparisons with data or risk estimates. This distribution method also saves hundreds of pounds of paper per year and costs substantially less.*

CONTENTS, USES, AND LIMITATIONS OF THE RBC TABLE

The Table contains reference doses and carcinogenic potency slopes (obtained from IRIS through September 1, 1997, HEAST through July 1997, the EPA-NCEA Superfund Health Risk Technical Support Center, and other EPA sources) for about 600 chemicals. These toxicity constants have been combined with "standard" exposure scenarios to calculate RBCs--chemical concentrations corresponding to fixed levels of risk (i.e., a hazard quotient of one, or lifetime cancer risk of  $10^{-6}$ , whichever occurs at a lower concentration) in water, air, fish tissue, and soil.

The RBC table formerly included soil screening levels (SSLs) for protection of groundwater and air. We have discontinued these to avoid conflicts with EPA/OSWER's SSL guidance document, now in general use. To consider intermedia transfers of contaminants at the screening stage of risk assessment, we suggest that you use this guidance (available from NTIS as document numbers 9355.4-1, PB95-965530, or EPA540/R-94/105).

The Region III toxicologists use RBCs to screen sites not yet on the NPL, respond rapidly to citizen inquiries, and spot-check formal baseline risk assessments. The background materials provide the complete basis for all the calculations, with the intent of showing users exactly how the RBCs were developed. Simply put, RBCs are risk assessments run in reverse. For a single contaminant in a single medium, under standard default exposure assumptions, the RBC corresponds to the target risk or hazard quotient.

RBCs also have several important limitations. Specifically excluded from consideration are (1) transfers from soil to air and groundwater, and (2) cumulative risk from multiple contaminants or media. Also, the toxicity information in the table has been assembled by hand, and (despite extensive checking and years of use) may contain errors. It's advisable to cross-check before relying on any RfDs or CPSs in the table. If you find any errors, please send me a note.

Many users want to know if the risk-based concentrations can be used as valid no-action levels or cleanup levels, especially for soils. The answer is a bit complex. First, it is important to realize that the RBC table does not constitute regulation or guidance, and should not be viewed as a substitute for a site-specific risk assessment. For sites where:

1. A single medium is contaminated;
2. A single contaminant contributes nearly all of the health risk;
3. Volatilization or leaching of that contaminant from soil is expected not to be significant;
4. The exposure scenarios used in the RBC table are appropriate for the site;
5. The fixed risk levels used in the RBC table are appropriate for the site; and
6. Risk to ecological receptors is expected not to be significant;

the risk-based concentrations would probably be protective as no-action levels or cleanup goals. However, to the extent that a site deviates from this description, as most do, the RBCs would not necessarily be appropriate.

*To summarize, the table should generally not be used to (1) set cleanup or no-action levels at CERCLA sites or RCRA Corrective Action sites, (2) substitute for EPA guidance for preparing baseline risk assessments, or (3) determine if a waste is hazardous under RCRA.*

## ANSWERS TO FREQUENTLY ASKED QUESTIONS

To help you better understand the RBC table, here are answers to our most often-asked questions:

*1. How can the age-adjusted inhalation factor (11.66) be less than the inhalation rate for either a child (12) or an adult (20)?*

Age-adjusted factors are not intake rates, but rather partial calculations which have different units than intake rates do. The fact that these partial calculations have values similar to intake rates is really coincidental, an artifact of the similar magnitude of years of exposure and time-averaged body weight.

*2. Why does arsenic appear in the RBC table separately as a carcinogen and a non-carcinogen, while other contaminants do not?*

Arsenic is double-entered to ensure that the risk assessor realizes that non-carcinogenic concerns are significant for arsenic. Otherwise, it might be tempting to accept a  $1e-4$  risk (43 ppm in residential soil), when the oral reference dose would be exceeded at 23 ppm.

Also, EPA has a little-known risk management policy for arsenic (dating from 1988) that suggests that arsenic-related cancer risks of up to  $1e-3$  can be accepted because the cancers are squamous cell carcinomas with a low mortality rate. Thus, non-carcinogenic RBCs represent an important limitation on acceptable arsenic concentrations.

*3. Many contaminants have no inhaled reference dose or carcinogenic potency slope in IRIS, yet these numbers appear in the RBC table with IRIS given as the source. Where did the numbers come from?*

Most inhaled reference doses and potency slopes in the RBC table are converted from reference concentrations and unit risk values which do appear in IRIS. These conversions assume 70-kg persons inhaling  $20 \text{ m}^3/\text{d}$ . For example, the inhalation unit risk for arsenic ( $4.3e-3$  risk per  $\mu\text{g}/\text{m}^3$ ) is divided by  $20 \text{ m}^3/\text{d}$  and multiplied by 70 kg times 1000  $\mu\text{g}/\text{mg}$ , yielding a CPSi of 15.1 risk per  $\text{mg}/\text{kg}/\text{d}$ .

*4. Why does the RBC table base soil RBCs for cadmium on a reference dose that applies only to drinking water?*

The RBC table's use of the drinking water RfDs for cadmium reflects (1) the limited space available in the already-crowded table, and (2) the intended use of the table as a screening tool rather than a source of cleanup levels (thereby making false positives acceptable). For a formal risk assessment, Region III would use the food RfD for soil ingestion.

At this time, only cadmium(as far as we know) has distinct oral RfDs for water and food. Adding the food RfD to the table would require an entire column, which would be about 99.9% blank. The table has become so crowded that it would be difficult to accommodate another column. Also, we've given this problem a relatively low priority because the table's primary purpose is to

identify environmental problems needing further study. RBCs were never intended for uncritical use as cleanup levels, merely to identify potential problems which need a closer look.

5. For manganese, IRIS shows an oral reference dose of 0.14 mg/kg/d, but the RBC table uses  $2.3 \times 10^{-2}$  mg/kg/d. Why? The IRIS RfD includes manganese from all sources, including diet. The explanatory text in IRIS recommends using a modifying factor of 3 when calculating risks associated with ingesting soil or drinking water, and the table follows this recommendation. I have also incorporated a factor of 2 for relative source contribution on the assumption that a typical individual will obtain half of the RfD (5 mg/d, or 0.07 mg/kg/d) from her diet, thereby limiting the acceptable contribution from soil and water to only half of the IRIS RfD. Thus, the IRIS RfD has been lowered by a factor of  $2 \times 3$ , or 6.

7. What is the source of the child's inhalation rate of 12 m<sup>3</sup>/d?

The calculation comes from basic physiology. It's a scaling of the mass-specific 20 m<sup>3</sup>/d rate for adults from a body mass of 70 kg to 15 kg, using the two-thirds power of mass, as follows:

$$\begin{array}{lll} \text{Let:} & \text{IRcm} & = \text{mass-specific child inhalation rate (m}^3\text{/kg/d)} \\ & \text{IRc} & = \text{child inhalation rate (m}^3\text{/d)} \end{array}$$

$$20 \text{ m}^3\text{/d} \div 70\text{kg} = 0.286 \text{ m}^3\text{/kg/d (mass-specific adult inhalation rate)}$$

$$0.286 \text{ m}^3\text{/kg/d} \times (70^{67}) = (\text{IRcm}) \times (15^{67})$$

$$\text{IRcm} = (0.286) \times (70^{67}) \div (15^{67}) = 0.286 \times 2.807 = 0.803 \text{ m}^3\text{/kg/d}$$

$$\text{IRc} = \text{IRcm} \times 15\text{kg} = 0.803 \text{ m}^3\text{/kg/d} \times 15\text{kg} = 12.04 \text{ m}^3\text{/d}$$

A short (but algebraically equivalent) way to do the conversion:

$$20 \times (15 \div 70)^{3/3} = 11.97 \text{ (different from, but actually more correct than, 12.04 because of rounding error in calculating by the long form).}$$

8. Can the oral RfDs in the RBC table be applied to dermal exposure?

Not directly. EPA's Office of Research and Development is working on dermal RfDs for some substances, but has not yet produced any final values. When dermal RfDs do appear, they will undoubtedly be based on absorbed dose rather than administered dose. Oral RfDs are (usually) based on administered dose and therefore tacitly include a GI absorption factor. Thus, any use of oral RfDs in dermal risk calculations would have to involve removing this absorption factor. Consult the Risk Assessment Guidance for Superfund, Part A, Appendix A, for further details on how to do this.

9. The exposure variables table in the RBC background document lists the averaging time for non-carcinogens as "ED\*365". What does that mean?

ED is exposure duration, in years, and '\*' is the computer-ese symbol for multiplication. Multiplying ED by 365 simply converts the duration to days. In fact, the ED term is included in both

the numerator and denominator of the RBC algorithms for non-cancer risk, canceling it altogether. We expressed the algorithm this way to allow users to realize this. The total exposure is really adjusted only by EF (days exposed per year) divided by 365. (Note that this explanation applies to non-carcinogenic risk only; for carcinogens, exposure is pro-rated over the number of days in a 70-year life span.)

*10. Why is inorganic lead not included in the RBC table?*

The reason that lead is missing from the RBC table is simple, and fundamental: EPA has no reference dose or potency slope for inorganic lead, so it wasn't possible to calculate risk-based concentrations. EPA considers lead a special case because:

- (1) Lead is ubiquitous in all media, so human exposure comes from multiple sources. Comparing single-medium exposures with a reference dose would be misleading.
- (2) If EPA did develop a reference dose for lead by the same methods other reference doses, we would probably find that most people already exceed it. Since EPA already knows this and is moving aggressively to lower lead releases nationally, such findings at individual sites would be irrelevant and unduly alarming.
- (3) EPA decided to take a new approach to distinguish important lead exposures from trivial ones. EPA developed a computer model (the IEUBK model) which predicts children's blood lead concentrations using lead levels in various media as inputs. The idea is to evaluate a child's entire environment, and reduce lead exposures in the most cost-effective way.

On the practical side, there are several EPA policies on lead which effectively substitute for RBCs. The EPA Office of Solid Waste has released a detailed directive on risk assessment and cleanup of residential soil lead. The directive recommends that soil lead levels less than 400 ppm be considered safe for residential use. Above that level, the document suggests collecting certain types of data and modeling children's blood lead with the IEUBK model. For the purposes of the RBC table, the *de facto* residential soil number would be 400 mg/kg. For water, we suggest 15 ppb (from the national EPA Action Level), and for air, the National Ambient Air Quality Standard.

*11. Where did the potency slopes for carcinogenic PAHs come from?*

The source of the potency slopes for PAHs is "Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons," Final Draft, EPA Environmental Criteria and Assessment Office, Cincinnati, OH. It's available from NTIS as document number ECAO-CIN-842 (March, 1993). The slopes are expressed in terms of order-of-magnitude equivalence factors relating the compounds to benzo[a]pyrene; we have converted these TEQs to potency slopes to fit the format of the table.

*12. May I please have a copy of the January 1991 RBC table?*

We're sorry, but no. The RBC table doesn't represent regulation or guidance, so past issues have no legal importance. Each time we update the table we destroy all obsolete copies, electronic and paper. We do this to ensure that only one set of RBCs, the one based on current information,



exists at any time.

*13. I've noticed that some soil RBCs are one million parts per million. Since some of these substances are liquids, that's obviously ridiculous. What is that basis for these calculations?*

A soil RBC of one million parts per million means that no amount of the contaminant in soil will cause a receptor to exceed the oral reference dose by incidental ingestion of soil. In fact, some contaminants would have RBCs of more than one million ppm, but the algorithms cap concentrations at 100%. The reason we retain these admittedly impossible numbers is to let users see that the contaminant is not a threat via soil ingestion.

However, it's important to realize that the RBC calculations do not consider the potential of soil contaminants to leach to groundwater or escape to air by volatilization or dust entrainment. To consider these inter-media transfers, it's necessary to either monitor air and groundwater, or to use a mathematical model. Measured or modeled air and groundwater concentrations should then be compared to the RBCs for air and tap water.

Inter-media transfers are considered more fully in the soil screening level (SSL) guidance. The SSL guidance also incorporates sampling recommendations and statistical application of the SSLs. However, EPA Headquarters has proposed only about a hundred SSLs so far, so the list is still rather short.

*14. Please elaborate on the meaning of the 'W' source code in the table.*

The "W" code means that a reference dose or potency slope for a contaminant is currently not present on either IRIS or HEAST, but that it once was present on either IRIS or HEAST and was removed. Such withdrawal usually indicates that consensus on the number no longer exists among EPA scientists, but not that EPA believes the contaminant to be unimportant. Older versions of the RBC table had separate codes for IRIS and HEAST withdrawals, but we changed to a single code for both because, after all, it hardly matters.

We retain withdrawn numbers in the table because we still need to deal with these contaminants during the sometimes very long delays before replacement numbers are ready. We take the position that for the purpose of screening an obsolete RBC is better than none at all. The 'W' code should serve as a clear warning that before making any serious decision involving that contaminant you will need to develop an interim value based on current scientific understanding.

If you are assessing risks at a site where a major contaminant is coded "W," consider working with your Regional EPA risk assessor to develop a current toxicity constant. If the site is being studied under CERCLA, the EPA-NCEA Regional Technical Support group may be able to assist.

*15. Can I get copies of supporting documents for interim toxicity constants which are coded "E" in the RBC table?*

Unfortunately, Region 3 does not have a complete set of supporting documents. The EPA-NCEA Superfund Health Risk Technical Support Center prepares these interim toxicity constants in response to site-specific requests from Regional risk assessors, and sends the documentation only to

the requestor. The RBC tables contain only the interim values (those with "E" codes) that we've either requested ourselves or otherwise obtained copies of. There may be many more interim values of which we are unaware. Also, we don't receive automatic updates when NCEA revisits a contaminant, so it's likely that some interim values in the RBC table are obsolete.

It has been NCEA's policy to deny requests for documentation of interim toxicity constants when the documentation is more than two years old. Furthermore, since NCEA's Superfund Technical Support Center is mainly for the support of Superfund, it usually cannot develop new toxicity criteria unless authorized to do so for a specific Superfund project. Although Region 3 has sometimes provided documentation to support numbers we use in risk assessments, for the above-stated reasons we have no assurance that the assessments, or even the interim numbers, are current. We've decided to discontinue distributing information that may be misleading. If an "E"-coded contaminant is a major risk contributor at your site, we strongly suggest that you work with EPA to develop an up-to-date reference dose or slope factor.

#### CHANGES IN THIS ISSUE OF THE RBC TABLE

Substances having new or revised EPA toxicity constants that result in a change in a revised RBC are now flagged marked with "\*\*\*" before the contaminant name. This is to help users quickly pick out substances with new RBCs.

#### QUESTIONS, COMMENTS AND ADVICE

If you have a question about the RBC Table, please call EPA Region III's Superfund Technical Support Section at 215-566-3041. We'll do our best to answer your questions about how the Table was prepared and what the numbers mean. If you have a question about applying the RBC Table to a specific site, please contact the EPA Regional Office handling the project. Thanks for your help and cooperation, and we hope that the RBC Table continues to be a useful resource.

Attachment

**Risk-Based Concentration Table**  
October 22, 1997

Page 1 of 15

Sources: I=IRIS H=HEAST A=HEAST alternate W=Withdrawn from IRIS or HEAST E=EPA-NCEA Regional Support provisional value O=Other EPA documents.										Basis: C=carcinogenic effects N=non-carcinogenic effects							
Risk-Based Concentrations																	

**Risk-Based Concentration Table**  
October 22, 1997

Page 2 of 15

Sources: I=IRIS H=HEAST A=HEAST alternate W=Withdrawn from IRIS or HEAST E=EPA-NCEA Regional Support provisional value O=Other EPA documents.										Basis: C=carcinogenic effects N=non-carcinogenic effects							
										Risk-Based Concentrations							
								V	Tap	Ambient				Soil Ingestion			
Contaminant	CAS	RfDo mg/kg/d	RfDi mg/kg/d	CPSo kg·d/mg	CPSi kg·d/mg			O	Water µg/L	Air µg/m3	Fish mg/kg		Industrial mg/kg	Residential mg/kg			
Assure	76578148	9.00E-03	I						3.30E+02	N	3.30E+01	N	1.20E+01	N	1.80E+04	N	
Asulam	3337711	5.00E-02	I						1.80E+03	N	1.80E+02	N	6.80E+01	N	1.00E+05	N	
Atrazine	1912249	3.50E-02	I	2.22E-01	II				3.00E-01	C	2.80E-02	C	1.40E-02	C	2.60E+01	C	
Avermectin B1	65195553	4.00E-04	I						1.50E+01	N	1.50E+00	N	5.40E-01	N	8.20E+02	N	
Azobenzene	103333			1.10E-01	I	1.08E-01	I		6.10E-01	C	5.80E-02	C	2.90E-02	C	5.20E+01	C	
Barium and compounds	7440393	7.00E-02	I	1.43E-04	A				2.60E+03	N	5.20E-01	N	9.50E+01	N	1.40E+05	N	
Baygon	114261	4.00E-03	I						1.50E+02	N	1.50E+01	N	5.40E+00	N	8.20E+03	N	
Bayleton	43121433	3.00E-02	I						1.10E+03	N	1.10E+02	N	4.10E+01	N	6.10E+04	N	
Baythroid	68359375	2.50E-02	I						9.10E+02	N	9.10E+01	N	3.40E+01	N	5.10E+04	N	
Benefin	1861401	3.00E-01	I						1.10E+04	N	1.10E+03	N	4.10E+02	N	6.10E+05	N	
Benomyl	17804352	5.00E-02	I						1.80E+03	N	1.80E+02	N	6.80E+01	N	1.00E+05	N	
Bentazon	25057890	2.50E-03	I						9.10E+01	N	9.10E+00	N	3.40E+00	N	5.10E+03	N	
Benzaldehyde	100527	1.00E-01	I					x	6.10E+02	N	3.70E+02	N	1.40E+02	N	2.00E+05	N	
Benzene	71432	3.00E-03	E	1.71E-03	E	2.90E-02	I	2.90E-02	I	x	3.60E-01	C	2.20E-01	C	2.00E+02	C	
Benzenethiol	108985	1.00E-05	H						3.70E-01	N	3.70E-02	N	1.40E-02	N	2.00E+01	N	
Benzidine	92875	3.00E-03	I			2.30E+02	I	2.35E+02	I		2.90E-04	C	2.70E-05	C	1.40E-05	C	
Benzoic acid	65850	4.00E+00	I						1.50E+05	N	1.50E+04	N	5.40E+03	N	1.00E+06	N	
Benzotrithloride	98077			1.30E+01	I				5.20E-03	C	4.80E-04	C	2.40E-04	C	4.40E-01	C	
Benzyl alcohol	100516	3.00E-01	II						1.10E+04	N	1.10E+03	N	4.10E+02	N	6.10E+05	N	
Benzyl chloride	100447			1.70E-01	I			x	6.20E-02	C	3.70E-02	C	1.90E-02	C	3.40E+01	C	
Beryllium and compounds	7440417	5.00E-03	I	4.30E+00	I	8.40E+00	I		1.60E-02	C	7.50E-04	C	7.30E-04	C	1.30E+00	C	
Bidrin	141662	1.00E-04	I						3.70E+00	N	3.70E-01	N	1.40E-01	N	2.00E+02	N	
Bipenthrin (Talstar)	82657043	1.50E-02	I						5.50E+02	N	5.50E+01	N	2.00E+01	N	3.10E+04	N	
1,1-Biphenyl	92524	5.00E-02	I						1.80E+03	N	1.80E+02	N	6.80E+01	N	1.00E+05	N	
Bis(2-chloroethyl)ether	111444			1.10E+00	I	1.16E+00	I	x	9.20E-03	C	5.40E-03	C	2.90E-03	C	5.20E+00	C	
Bis(2-chloroisopropyl)ether	39638329	4.00E-02	I	7.00E-02	W	3.50E-02	W	x	2.60E-01	C	1.80E-01	C	4.50E-02	C	8.20E+01	C	
Bis(chloromethyl)ether	542881			2.20E+02	I	2.17E+02	I	x	4.90E-05	C	2.90E-05	C	1.40E-05	C	2.60E-02	C	
**Bis(2-chloro-1-methylethyl)ether	0			7.00E-02	H	3.50E-02	H		9.60E-01	C	1.80E-01	C	4.50E-02	C	8.20E+01	C	
Bis(2-ethylhexyl)phthalate (DEHP)	117817	2.00E-02	I	1.40E-02	I	1.40E-02	E		4.80E+00	C	4.50E-01	C	2.30E-01	C	4.10E+02	C	
Bisphenol A	80057	5.00E-02	I						1.80E+03	N	1.80E+02	N	6.80E+01	N	1.00E+05	N	
Boron (and borates)	7440428	9.00E-02	I	5.71E-03	H				3.30E+03	N	2.10E+01	N	1.20E+02	N	1.80E+05	N	
Boron trifluoride	7637072			2.00E-04	II				7.30E+00	N	7.30E-01	N	0.00E+00		0.00E+00		
Bromodichloromethane	75274	2.00E-02	I			6.20E-02	I	x	1.70E-01	C	1.00E-01	C	5.10E-02	C	9.20E+01	C	
Bromoethene	593602					1.10E-01	H	x	9.60E-02	C	5.70E-02	C	0.00E+00		0.00E+00		
Bromoform (tribromomethane)	75252	2.00E-02	I	7.90E-03	I	3.85E-03	I	x	2.40E+00	C	1.60E+00	C	4.00E-01	C	7.20E+02	C	
Bromomethane	74839	1.40E-03	I	1.43E-03	I			x	8.70E+00	N	5.20E+00	N	1.90E+00	N	2.90E+03	N	
4-Bromophenyl phenyl ether	101553	5.80E-02	O						2.10E+03	N	2.10E+02	N	7.80E+01	N	1.20E+05	N	
Bromophos	2104963	5.00E-03	H						1.80E+02	N	1.80E+01	N	6.80E+00	N	1.00E+04	N	
Bromoxynil	1689845	2.00E-02	I						7.30E+02	N	7.30E+01	N	2.70E+01	N	4.10E+04	N	
Bromoxynil octanoate	1689992	2.00E-02	I						7.30E+02	N	7.30E+01	N	2.70E+01	N	4.10E+04	N	
1,3-Butadiene	106990					9.80E-01	I	x	1.10E-02	C	6.40E-03	C	0.00E+00		0.00E+00		

**Risk-Based Concentration Table**  
October 22, 1997

Page 3 of 15

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										Risk-Based Concentrations									
										Ambient				Soil Ingestion					
Contaminant	CAS	RfDo mg/kg/d	RfDi mg/kg/d		CPSo kg-d/mg	CPSi kg-d/mg	V O C	Tap Water µg/L		Air µg/m3		Fish mg/kg		Industrial mg/kg	Residential mg/kg				
1-Butanol	71363	1.00E-01	I					3.70E+03	N	3.70E+02	N	1.40E+02	N	2.00E+05	N	7.80E+03	N		
Butyl benzyl phthalate	85687	2.00E-01	I					7.30E+03	N	7.30E+02	N	2.70E+02	N	4.10E+05	N	1.60E+04	N		
Butylate	2008415	5.00E-02	I					1.80E+03	N	1.80E+02	N	6.80E+01	N	1.00E+05	N	3.90E+03	N		
**n-Butylbenzene	104518	1.00E-02	E				x	6.10E+01	N	3.70E+01	N	1.40E+01	N	2.00E+04	N	7.80E+02	N		
sec-Butylbenzene	135988	1.00E-02	E				x	6.10E+01	N	3.70E+01	N	1.40E+01	N	2.00E+04	N	7.80E+02	N		
tert-Butylbenzene	104518	1.00E-02	E				x	6.10E+01	N	3.70E+01	N	1.40E+01	N	2.00E+04	N	7.80E+02	N		
Butylphthalyl butylglycolate	85701	1.00E+00	I					3.70E+04	N	3.70E+03	N	1.40E+03	N	1.00E+06	N	7.80E+04	N		
Cacodylic acid	75605	3.00E-03	H					1.10E+02	N	1.10E+01	N	4.10E+00	N	6.10E+03	N	2.30E+02	N		
Cadmium and compounds	7440439	5.00E-04	I	5.71E-05	W	6.30E+00	I	1.80E+01	N	9.90E-04	C	6.80E-01	N	1.00E+03	N	3.90E+01	N		
Caprolactam	105602	5.00E-01	I					1.80E+04	N	1.80E+03	N	6.80E+02	N	1.00E+06	N	3.90E+04	N		
Captafol	2425061	2.00E-03	I		8.60E-03	H		7.80E+00	C	7.30E-01	C	3.70E-01	C	6.70E+02	C	7.40E+01	C		
Captan	133062	1.30E-01	I		3.50E-03	H		1.90E+01	C	1.80E+00	C	9.00E-01	C	1.60E+03	C	1.80E+02	C		
Carbaryl	63252	1.00E-01	I					3.70E+03	N	3.70E+02	N	1.40E+02	N	2.00E+05	N	7.80E+03	N		
Carbofuran	1563662	5.00E-03	I					1.80E+02	N	1.80E+01	N	6.80E+00	N	1.00E+04	N	3.90E+02	N		
Carbon disulfide	75150	1.00E-01	I	2.00E-01	I		x	1.00E+03	N	7.30E+02	N	1.40E+02	N	2.00E+05	N	7.80E+03	N		
Carbon tetrachloride	56235	7.00E-04	I	5.71E-04	E	1.30E-01	I	5.25E-02	I	1.60E-01	C	1.20E-01	C	4.40E+01	C	4.90E+00	C		
Carbosulfan	55285148	1.00E-02	I					3.70E+02	N	3.70E+01	N	1.40E+01	N	2.00E+04	N	7.80E+02	N		
Carboxin	5234684	1.00E-01	I					3.70E+03	N	3.70E+02	N	1.40E+02	N	2.00E+05	N	7.80E+03	N		
Chloral	75876	2.00E-03	I					7.30E+01	N	7.30E+00	N	2.70E+00	N	4.10E+03	N	1.60E+02	N		
Chloramben	133904	1.50E-02	I					5.50E+02	N	5.50E+01	N	2.00E+01	N	3.10E+04	N	1.20E+03	N		
Chloranil	118752				4.03E-01	H		1.70E-01	C	1.60E-02	C	7.80E-03	C	1.40E+01	C	1.60E+00	C		
**Chlordane	57749	5.00E-04	I		3.50E-01	I	3.50E-01	I	1.90E-01	C	1.80E-02	C	9.00E-03	C	1.60E+01	C	1.80E+00	C	
Chlorimuron-ethyl	90982324	2.00E-02	I					7.30E+02	N	7.30E+01	N	2.70E+01	N	4.10E+04	N	1.60E+03	N		
Chlorine	7782505	1.00E-01	I					3.70E+03	N	3.70E+02	N	1.40E+02	N	2.00E+05	N	7.80E+03	N		
Chlorine dioxide	10049044			5.71E-05	I			2.10E+00	N	2.10E-01	N	0.00E+00		0.00E+00		0.00E+00			
Chloroacetaldehyde	107200	6.90E-03	O					2.50E+02	N	2.50E+01	N	9.30E+00	N	1.40E+04	N	5.40E+02	N		
Chloroacetic acid	79118	2.00E-03	H					7.30E+01	N	7.30E+00	N	2.70E+00	N	4.10E+03	N	1.60E+02	N		
2-Chloroacetophenone	532274			8.57E-06	I			3.10E-01	N	3.10E-02	N	0.00E+00		0.00E+00		0.00E+00			
4-Chloroaniline	106478	4.00E-03	I					1.50E+02	N	1.50E+01	N	5.40E+00	N	8.20E+03	N	3.10E+02	N		
Chlorobenzene	108907	2.00E-02	I	5.71E-03	A		x	3.90E+01	N	2.10E+01	N	2.70E+01	N	4.10E+04	N	1.60E+03	N		
Chlorobenzilate	510156	2.00E-02	I		2.70E-01	H	2.70E-01	H	2.50E-01	C	2.30E-02	C	2.10E+01	C	2.40E+00	C			
p-Chlorobenzoic acid	74113	2.00E-01	H					7.30E+03	N	7.30E+02	N	2.70E+02	N	4.10E+05	N	1.60E+04	N		
4-Chlorobenzotrifluoride	98566	2.00E-02	H					7.30E+02	N	7.30E+01	N	2.70E+01	N	4.10E+04	N	1.60E+03	N		
2-Chloro-1,3-butadiene (chloroprene)	126998	2.00E-02	A	2.00E-03	H		x	1.40E+01	N	7.30E+00	N	2.70E+01	N	4.10E+04	N	1.60E+03	N		
1-Chlorobutane	109693	4.00E-01	H				x	2.40E+03	N	1.50E+03	N	5.40E+02	N	8.20E+05	N	3.10E+04	N		
Chlorodibromomethane	124481	2.00E-02	I		8.40E-02	I	x	1.30E-01	C	7.50E-02	C	3.80E-02	C	6.80E+01	C	7.60E+00	C		
1-Chloro-1,1-difluoroethane	75683			1.43E+01	I		x	8.70E+04	N	5.20E+04	N	0.00E+00		0.00E+00		0.00E+00			
Chlorodifluoromethane	75456			1.43E+01	I		x	8.70E+04	N	5.20E+04	N	0.00E+00		0.00E+00		0.00E+00			
**Chloroethane	75003	4.00E-01	E	2.86E+00	I	2.90E-03	E	3.60E+00	C	2.20E+00	C	1.10E+00	C	2.00E+03	C	2.20E+02	C		
2-Chloroethyl vinyl ether	110758	2.50E-02	O				x	1.50E+02	N	9.10E+01	N	3.40E+01	N	5.10E+04	N	2.00E+03	N		
Chloroform	67663	1.00E-02	I		6.10E-03	I	8.05E-02	I	x	1.50E-01	C	7.80E-02	C	5.20E-01	C	9.40E+02	C		

**Risk-Based Concentration Table**  
October 22, 1997

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Sources: I=IRIS H=HEAST A=HEAST alternate W=Withdrawn from IRIS or HEAST  
E=EPA-NCEA Regional Support provisional value O=Other EPA documents.

Basis: C=carcinogenic effects  
N=non-carcinogenic effects

Contaminant	CAS	Risk-Based Concentrations		CPSo kg-d/mg	CPSi kg-d/mg	V O C	Tap Water µg/L	Ambient Air µg/m3	Fish mg/kg	Soil Ingestion	
		RfDo mg/kg/d	RfDi mg/kg/d							Industrial mg/kg	Residential mg/kg
Chloromethane	74873			1.30E-02 H	6.30E-03 H	x	1.40E+00 C	9.90E-01 C	2.40E-01 C	4.40E+02 C	4.90E+01 C
4-Chloro-2-methylaniline hydrochloride	3165933			4.60E-01 H			1.50E-01 C	1.40E-02 C	6.90E-03 C	1.20E+01 C	1.40E+00 C
4-Chloro-2-methylaniline	95692			5.80E-01 H			1.20E-01 C	1.10E-02 C	5.40E-03 C	9.90E+00 C	1.10E+00 C
beta-Chloronaphthalene	91587	8.00E-02 I					2.90E+03 N	2.90E+02 N	1.10E+02 N	1.60E+05 N	6.30E+03 N
o-Chloronitrobenzene	88733			2.50E-02 H		x	4.20E-01 C	2.50E-01 C	1.30E-01 C	2.30E+02 C	2.60E+01 C
p-Chloronitrobenzene	100005			1.80E-02 H		x	5.90E-01 C	3.50E-01 C	1.80E-01 C	3.20E+02 C	3.50E+01 C
2-Chlorophenol	95578	5.00E-03 I					1.80E+02 N	1.80E+01 N	6.80E+00 N	1.00E+04 N	3.90E+02 N
2-Chloropropane	75296		2.86E-02 H			x	1.70E+02 N	1.00E+02 N	0.00E+00 N	0.00E+00 N	0.00E+00 N
Chlorothalonil	1897456	1.50E-02 I		1.10E-02 H			6.10E+00 C	5.70E-01 C	2.90E-01 C	5.20E+02 C	5.80E+01 C
o-Chlorotoluene	95498	2.00E-02 I				x	1.20E+02 N	7.30E+01 N	2.70E+01 N	4.10E+04 N	1.60E+03 N
Chlorpropham	101213	2.00E-01 I					7.30E+03 N	7.30E+02 N	2.70E+02 N	4.10E+05 N	1.60E+04 N
Chlorpyrifos	2921882	3.00E-03 I					1.10E+02 N	1.10E+01 N	4.10E+00 N	6.10E+03 N	2.30E+02 N
Chlorpyrifos-methyl	5598130	1.00E-02 H					3.70E+02 N	3.70E+01 N	1.40E+01 N	2.00E+04 N	7.80E+02 N
Chlorsulfuron	64902723	5.00E-02 I					1.80E+03 N	1.80E+02 N	6.80E+01 N	1.00E+05 N	3.90E+03 N
Chlorthiophos	60238564	8.00E-04 H					2.90E+01 N	2.90E+00 N	1.10E+00 N	1.60E+03 N	6.30E+01 N
Chromium III and compounds	16065831	1.00E+00 I	5.71E-07 W				3.70E+04 N	2.10E-03 N	1.40E+03 N	1.00E+06 N	7.80E+04 N
Chromium VI and compounds	18540299	5.00E-03 I			4.20E+01 I		1.80E+02 N	1.50E-04 C	6.80E+00 N	1.00E+04 N	3.90E+02 N
Coal tar	8001589				2.20E+00 W		0.00E+00	2.80E-03 C	0.00E+00	0.00E+00	0.00E+00
Cobalt	7440484	6.00E-02 E					2.20E+03 N	2.20E+02 N	8.10E+01 N	1.20E+05 N	4.70E+03 N
Coke Oven Emissions	8007452				2.17E+00 I		0.00E+00	2.90E-03 C	0.00E+00	0.00E+00	0.00E+00
**Copper and compounds	7440508	3.50E+00 H					1.30E+05 N	1.30E+04 N	4.70E+03 N	1.00E+06 N	2.70E+05 N
Crotonaldehyde	123739	1.00E-02 W		1.90E+00 H	1.90E+00 W		3.50E-02 C	3.30E-03 C	1.70E-03 C	3.00E+00 C	3.40E-01 C
**Cumene	98828	1.00E-01 I	1.14E-01 I				3.70E+03 N	4.20E+02 N	1.40E+02 N	2.00E+05 N	7.80E+03 N
Cyanides:	0						0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Barium cyanide	542621	1.00E-01 W					3.70E+03 N	3.70E+02 N	1.40E+02 N	2.00E+05 N	7.80E+03 N
Calcium cyanide	592018	4.00E-02 I					1.50E+03 N	1.50E+02 N	5.40E+01 N	8.20E+04 N	3.10E+03 N
Chlorine cyanide	506774	5.00E-02 I					1.80E+03 N	1.80E+02 N	6.80E+01 N	1.00E+05 N	3.90E+03 N
Copper cyanide	544923	5.00E-03 I					1.80E+02 N	1.80E+01 N	6.80E+00 N	1.00E+04 N	3.90E+02 N
Cyanazine	21725462	2.00E-03 H		8.40E-01 H			8.00E-02 C	7.50E-03 C	3.80E-03 C	6.80E+00 C	7.60E-01 C
Cyanogen	460195	4.00E-02 I					1.50E+03 N	1.50E+02 N	5.40E+01 N	8.20E+04 N	3.10E+03 N
Cyanogen bromide	506683	9.00E-02 I					3.30E+03 N	3.30E+02 N	1.20E+02 N	1.80E+05 N	7.00E+03 N
Cyanogen chloride	506774	5.00E-02 I					1.80E+03 N	1.80E+02 N	6.80E+01 N	1.00E+05 N	3.90E+03 N
Free cyanide	57125	2.00E-02 I					7.30E+02 N	7.30E+01 N	2.70E+01 N	4.10E+04 N	1.60E+03 N
Hydrogen cyanide	74908	2.00E-02 I	8.57E-04 I				7.30E+02 N	3.10E+00 N	2.70E+01 N	4.10E+04 N	1.60E+03 N
Potassium cyanide	151508	5.00E-02 I					1.80E+03 N	1.80E+02 N	6.80E+01 N	1.00E+05 N	3.90E+03 N
Potassium silver cyanide	506616	2.00E-01 I					7.30E+03 N	7.30E+02 N	2.70E+02 N	4.10E+05 N	1.60E+04 N
Silver cyanide	506649	1.00E-01 I					3.70E+03 N	3.70E+02 N	1.40E+02 N	2.00E+05 N	7.80E+03 N
Sodium cyanide	143339	4.00E-02 I					1.50E+03 N	1.50E+02 N	5.40E+01 N	8.20E+04 N	3.10E+03 N
**Thiocyanate	0	1.00E-01 E					3.70E+03 N	3.70E+02 N	1.40E+02 N	2.00E+05 N	7.80E+03 N
Zinc cyanide	557211	5.00E-02 I					1.80E+03 N	1.80E+02 N	6.80E+01 N	1.00E+05 N	3.90E+03 N
Cyclohexanone	108941	5.00E+00 I				x	3.00E+04 N	1.80E+04 N	6.80E+03 N	1.00E+06 N	3.90E+05 N

**Risk-Based Concentration Table**  
October 22, 1997

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Basis: C=carcinogenic effects  
N=non-carcinogenic effects

Contaminant	CAS	Risk-Based Concentrations															
		RfDo mg/kg/d	RfDi mg/kg/d	CPSo kg·d/mg	CPSi kg·d/mg	V O C	Tap Water µg/L	Ambient				Fish			Soil Ingestion		
								Air µg/m3							Industrial mg/kg	Residential mg/kg	
Cyclohexamine	108918	2.00E-01	I				7.30E+03	N	7.30E+02	N	2.70E+02	N	4.10E+05	N	1.60E+04	N	
Cyhalothrin/Karate	68085858	5.00E-03	I				1.80E+02	N	1.80E+01	N	6.80E+00	N	1.00E+04	N	3.90E+02	N	
Cypermethrin	52315078	1.00E-02	I				3.70E+02	N	3.70E+01	N	1.40E+01	N	2.00E+04	N	7.80E+02	N	
Cyromazine	66215278	7.50E-03	I				2.70E+02	N	2.70E+01	N	1.00E+01	N	1.50E+04	N	5.90E+02	N	
Dacthal	1861321	1.00E-02	I				3.70E+02	N	3.70E+01	N	1.40E+01	N	2.00E+04	N	7.80E+02	N	
Dalapon	75990	3.00E-02	I				1.10E+03	N	1.10E+02	N	4.10E+01	N	6.10E+04	N	2.30E+03	N	
Danitol	39515418	2.50E-02	I				9.10E+02	N	9.10E+01	N	3.40E+01	N	5.10E+04	N	2.00E+03	N	
DDD	72548			2.40E-01	I		2.80E-01	C	2.60E-02	C	1.30E-02	C	2.40E+01	C	2.70E+00	C	
DDE	72559			3.40E-01	I		2.00E-01	C	1.80E-02	C	9.30E-03	C	1.70E+01	C	1.90E+00	C	
DDT	50293	5.00E-04	I	3.40E-01	I	3.40E-01	2.00E-01	C	1.80E-02	C	9.30E-03	C	1.70E+01	C	1.90E+00	C	
Decabromodiphenyl ether	1163195	1.00E-02	I				6.10E+01	N	3.70E+01	N	1.40E+01	N	2.00E+04	N	7.80E+02	N	
Demeton	8065483	4.00E-05	I				1.50E+00	N	1.50E-01	N	5.40E-02	N	8.20E+01	N	3.10E+00	N	
Diallate	2303164			6.10E-02	H		1.70E-01	C	1.00E-01	C	5.20E-02	C	9.40E+01	C	1.00E+01	C	
Diazinon	333415	9.00E-04	H				3.30E+01	N	3.30E+00	N	1.20E+00	N	1.80E+03	N	7.00E+01	N	
Dibenzofuran	132649	4.00E-03	E				1.50E+02	N	1.50E+01	N	5.40E+00	N	8.20E+03	N	3.10E+02	N	
1,4-Dibromobenzene	106376	1.00E-02	I				6.10E+01	N	3.70E+01	N	1.40E+01	N	2.00E+04	N	7.80E+02	N	
1,2-Dibromo-3-chloropropane	96128		5.71E-05	I	1.40E+00	H	2.42E-03	H	x	4.80E-02	C	2.10E-01	N	2.30E-03	C	4.10E+00	C
1,2-Dibromoethane	106934		5.71E-05	H	8.50E+01	I	7.70E-01	I	x	7.50E-04	C	8.10E-03	C	3.70E-05	C	6.70E-02	C
Dibutyl phthalate	84742	1.00E-01	I				3.70E+03	N	3.70E+02	N	1.40E+02	N	2.00E+05	N	7.80E+03	N	
Dicamba	1918009	3.00E-02	I				1.10E+03	N	1.10E+02	N	4.10E+01	N	6.10E+04	N	2.30E+03	N	
**1,2-Dichlorobenzene	95501	9.00E-02	I	9.00E-03	E		6.40E+01	N	3.30E+01	N	1.20E+02	N	1.80E+05	N	7.00E+03	N	
1,3-Dichlorobenzene	541731	8.90E-02	O				5.40E+02	N	3.20E+02	N	1.20E+02	N	1.80E+05	N	7.00E+03	N	
1,4-Dichlorobenzene	106467		2.29E-01	I	2.40E-02	H	4.40E-01	C	2.60E-01	C	1.30E-01	C	2.40E+02	C	2.70E+01	C	
3,3'-Dichlorobenzidine	91941			4.50E-01	I		1.50E-01	C	1.40E-02	C	7.00E-03	C	1.30E+01	C	1.40E+00	C	
1,4-Dichloro-2-butene	764410				9.30E+00	H	1.10E-03	C	6.70E-04	C	0.00E+00		0.00E+00		0.00E+00		
Dichlorodifluoromethane	75718	2.00E-01	I	5.71E-02	A		3.90E+02	N	2.10E+02	N	2.70E+02	N	4.10E+05	N	1.60E+04	N	
1,1-Dichloroethane	75343	1.00E-01	H	1.43E-01	A		8.10E+02	N	5.20E+02	N	1.40E+02	N	2.00E+05	N	7.80E+03	N	
1,2-Dichloroethane (EDC)	107062	3.00E-02	E	1.40E-03	E	9.10E-02	I	9.10E-02	I	x	1.20E-01	C	6.90E-02	C	3.50E-02	C	
1,1-Dichloroethylene	75354	9.00E-03	I		6.00E-01	I	1.75E-01	I	x	4.40E-02	C	3.60E-02	C	5.30E-03	C	9.50E+00	C
1,2-Dichloroethylene (cis)	156592	1.00E-02	H				6.10E+01	N	3.70E+01	N	1.40E+01	N	2.00E+04	N	7.80E+02	N	
1,2-Dichloroethylene (trans)	156605	2.00E-02	I				1.20E+02	N	7.30E+01	N	2.70E+01	N	4.10E+04	N	1.60E+03	N	
1,2-Dichloroethylene (mixture)	540590	9.00E-03	H				5.50E+01	N	3.30E+01	N	1.20E+01	N	1.80E+04	N	7.00E+02	N	
2,4-Dichlorophenol	120832	3.00E-03	I				1.10E+02	N	1.10E+01	N	4.10E+00	N	6.10E+03	N	2.30E+02	N	
2,4-Dichlorophenoxyacetic Acid (2,4-D)	94757	1.00E-02	I				6.10E+01	N	3.70E+01	N	1.40E+01	N	2.00E+04	N	7.80E+02	N	
4-(2,4-Dichlorophenoxy)butyric Acid	94826	8.00E-03	I				2.90E+02	N	2.90E+01	N	1.10E+01	N	1.60E+04	N	6.30E+02	N	
1,2-Dichloropropane	78875		1.14E-03	I	6.80E-02	H	1.60E-01	C	9.20E-02	C	4.60E-02	C	8.40E+01	C	9.40E+00	C	
2,3-Dichloropropanol	616239	3.00E-03	I				1.10E+02	N	1.10E+01	N	4.10E+00	N	6.10E+03	N	2.30E+02	N	
1,3-Dichloropropene	542756	3.00E-04	I	5.71E-03	I	1.80E-01	H	1.30E-01	H	x	7.70E-02	C	4.80E-02	C	1.80E-02	C	
Dichlorvos	62737	5.00E-04	I	1.43E-04	I	2.90E-01	I				2.30E-01	C	2.20E-02	C	1.10E-02	C	
Dicofol	115322			4.40E-01	W		1.50E-01	C	1.40E-02	C	7.20E-03	C	1.30E+01	C	1.50E+00	C	
Dicyclopentadiene	77736	3.00E-02	H	5.71E-05	A		4.20E-01	N	2.10E-01	N	4.10E+01	N	6.10E+04	N	2.30E+03	N	

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Contaminant	CAS	RfDo mg/kg/d	RfDi mg/kg/d	CPSo kg·d/mg	CPSi kg·d/mg	V O C	Risk-Based Concentrations											
							Tap Water µg/L	Ambient Air µg/m3	Fish mg/kg	Soil Ingestion mg/kg		Industrial	Residential					
Dieldrin	60571	5.00E-05	I		1.60E+01	I	1.61E+01	I	4.20E-03	C	3.90E-04	C	2.00E-04	C	3.60E-01	C	4.00E-02	C
Diesel emissions	0		1.43E-03	I					5.20E+01	N	5.20E+00	N	0.00E+00		0.00E+00		0.00E+00	
Diethyl phthalate	84662	8.00E-01	I						2.90E+04	N	2.90E+03	N	1.10E+03	N	1.00E+06	N	6.30E+04	N
Diethylene glycol, monobutyl ether	112345		5.71E-03	H					2.10E+02	N	2.10E+01	N	0.00E+00		0.00E+00		0.00E+00	
Diethylene glycol, monoethyl ether	111900	2.00E+00	H						7.30E+04	N	7.30E+03	N	2.70E+03	N	1.00E+06	N	1.60E+05	N
Diethylformamide	617845	1.10E-02	H						4.00E+02	N	4.00E+01	N	1.50E+01	N	2.20E+04	N	8.60E+02	N
Di(2-ethylhexyl)adipate	103231	6.00E-01	I		1.20E-03	I			5.60E+01	C	5.20E+00	C	2.60E+00	C	4.80E+03	C	5.30E+02	C
Diethylstilbestrol	56531				4.70E+03	H			1.40E-05	C	1.30E-06	C	7.00E-07	C	1.20E-03	C	1.40E-04	C
Difenzoquat (Avenge)	43222486	8.00E-02	I						2.90E+03	N	2.90E+02	N	1.10E+02	N	1.60E+05	N	6.30E+03	N
Diiflubenzuron	35367385	2.00E-02	I						7.30E+02	N	7.30E+01	N	2.70E+01	N	4.10E+04	N	1.60E+03	N
1,1-Difluoroethane	75376		1.14E+01	I		x			6.90E+04	N	4.20E+04	N	0.00E+00		0.00E+00		0.00E+00	
Diisopropyl methylphosphonate (DIMP)	1445756	8.00E-02	I						2.90E+03	N	2.90E+02	N	1.10E+02	N	1.60E+05	N	6.30E+03	N
Dimethipin	55290647	2.00E-02	I						7.30E+02	N	7.30E+01	N	2.70E+01	N	4.10E+04	N	1.60E+03	N
Dimethoate	60515	2.00E-04	I						7.30E+00	N	7.30E-01	N	2.70E-01	N	4.10E+02	N	1.60E+01	N
3,3'-Dimethoxybenzidine	119904				1.40E-02	H			4.80E+00	C	4.50E-01	C	2.30E-01	C	4.10E+02	C	4.60E+01	C
Dimethylamine	124403		5.71E-06	W					2.10E-01	N	2.10E-02	N	0.00E+00		0.00E+00		0.00E+00	
2,4-Dimethylaniline hydrochloride	21436964				5.80E-01	H			1.20E-01	C	1.10E-02	C	5.40E-03	C	9.90E+00	C	1.10E+00	C
2,4-Dimethylaniline	95681				7.50E-01	H			9.00E-02	C	8.30E-03	C	4.20E-03	C	7.60E+00	C	8.50E-01	C
N,N-Dimethylaniline	121697	2.00E-03	I						7.30E+01	N	7.30E+00	N	2.70E+00	N	4.10E+03	N	1.60E+02	N
3,3'-Dimethylbenzidine	119937				9.20E+00	H			7.30E-03	C	6.80E-04	C	3.40E-04	C	6.20E-01	C	6.90E-02	C
N,N-Dimethylformamide	68122	1.00E-01	H	8.57E-03	I				3.70E+03	N	3.10E+01	N	1.40E+02	N	2.00E+05	N	7.80E+03	N
1,1-Dimethylhydrazine	57147				2.60E+00	W	3.50E+00	W	2.60E-02	C	1.80E-03	C	1.20E-03	C	2.20E+00	C	2.50E-01	C
1,2-Dimethylhydrazine	540738				3.70E+01	W	3.70E+01	W	1.80E-03	C	1.70E-04	C	8.50E-05	C	1.50E-01	C	1.70E-02	C
2,4-Dimethylphenol	105679	2.00E-02	I						7.30E+02	N	7.30E+01	N	2.70E+01	N	4.10E+04	N	1.60E+03	N
2,6-Dimethylphenol	576261	6.00E-04	I						2.20E+01	N	2.20E+00	N	8.10E-01	N	1.20E+03	N	4.70E+01	N
3,4-Dimethylphenol	95658	1.00E-03	I						3.70E+01	N	3.70E+00	N	1.40E+00	N	2.00E+03	N	7.80E+01	N
Dimethyl phthalate	131113	1.00E+01	W						3.70E+05	N	3.70E+04	N	1.40E+04	N	1.00E+06	N	7.80E+05	N
Dimethyl terephthalate	120616	1.00E-01	I						3.70E+03	N	3.70E+02	N	1.40E+02	N	2.00E+05	N	7.80E+03	N
1,2-Dinitrobenzene	528290	4.00E-04	H						1.50E+01	N	1.50E+00	N	5.40E-01	N	8.20E+02	N	3.10E+01	N
1,3-Dinitrobenzene	99650	1.00E-04	I						3.70E+00	N	3.70E-01	N	1.40E-01	N	2.00E+02	N	7.80E+00	N
1,4-Dinitrobenzene	100254	4.00E-04	H						1.50E+01	N	1.50E+00	N	5.40E-01	N	8.20E+02	N	3.10E+01	N
4,6-Dinitro-o-cyclohexyl phenol	131895	2.00E-03	I						7.30E+01	N	7.30E+00	N	2.70E+00	N	4.10E+03	N	1.60E+02	N
**4,6-Dinitro-2-methylphenol	534521	1.00E-04	E						3.70E+00	N	3.70E-01	N	1.40E-01	N	2.00E+02	N	7.80E+00	N
2,4-Dinitrophenol	51285	2.00E-03	I						7.30E+01	N	7.30E+00	N	2.70E+00	N	4.10E+03	N	1.60E+02	N
Dinitrotoluene mixture	0				6.80E-01	I			9.90E-02	C	9.20E-03	C	4.60E-03	C	8.40E+00	C	9.40E-01	C
2,4-Dinitrotoluene	121142	2.00E-03	I						7.30E+01	N	7.30E+00	N	2.70E+00	N	4.10E+03	N	1.60E+02	N
2,6-Dinitrotoluene	606202	1.00E-03	H						3.70E+01	N	3.70E+00	N	1.40E+00	N	2.00E+03	N	7.80E+01	N
Dinoseb	88857	1.00E-03	I						3.70E+01	N	3.70E+00	N	1.40E+00	N	2.00E+03	N	7.80E+01	N
di-n-Octyl phthalate	117840	2.00E-02	H						7.30E+02	N	7.30E+01	N	2.70E+01	N	4.10E+04	N	1.60E+03	N
1,4-Dioxane	123911				1.10E-02	I			6.10E+00	C	5.70E-01	C	2.90E-01	C	5.20E+02	C	5.80E+01	C
Diphenamid	957517	3.00E-02	I						1.10E+03	N	1.10E+02	N	4.10E+01	N	6.10E+04	N	2.30E+03	N



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Contaminant	CAS	Risk-Based Concentrations																		
		RfDo mg/kg/d	RfDi mg/kg/d	CPSo kg·d/mg		CPSi kg·d/mg		V O C	Tap Water µg/L	Ambient		Soil Ingestion								
										Air µg/m3	Fish mg/kg	Industrial mg/kg	Residential mg/kg							
Diphenylamine	122394	2.50E-02	I						9.10E+02	N	9.10E+01	N	3.40E+01	N	5.10E+04	N	2.00E+03	N		
1,2-Diphenylhydrazine	122667					8.00E-01	I	7.70E-01	I		8.40E-02	C	8.10E-03	C	3.90E-03	C	7.20E+00	C	8.00E-01	C
Diquat	85007	2.20E-03	I								8.00E+01	N	8.00E+00	N	3.00E+00	N	4.50E+03	N	1.70E+02	N
Direct black 38	1937377					8.60E+00	H				7.80E-03	C	7.30E-04	C	3.70E-04	C	6.70E-01	C	7.40E-02	C
Direct blue 6	2602462					8.10E+00	H				8.30E-03	C	7.70E-04	C	3.90E-04	C	7.10E-01	C	7.90E-02	C
Direct brown 95	16071866					9.30E+00	H				7.20E-03	C	6.70E-04	C	3.40E-04	C	6.20E-01	C	6.90E-02	C
Disulfoton	298044	4.00E-05	I								1.50E+00	N	1.50E-01	N	5.40E-02	N	8.20E+01	N	3.10E+00	N
1,4-Dithiane	505293	1.00E-02	I								3.70E+02	N	3.70E+01	N	1.40E+01	N	2.00E+04	N	7.80E+02	N
Diuron	330541	2.00E-03	I								7.30E+01	N	7.30E+00	N	2.70E+00	N	4.10E+03	N	1.60E+02	N
Dodine	2439103	4.00E-03	I								1.50E+02	N	1.50E+01	N	5.40E+00	N	8.20E+03	N	3.10E+02	N
Endosulfan	115297	6.00E-03	I								2.20E+02	N	2.20E+01	N	8.10E+00	N	1.20E+04	N	4.70E+02	N
Endothall	145733	2.00E-02	I								7.30E+02	N	7.30E+01	N	2.70E+01	N	4.10E+04	N	1.60E+03	N
Endrin	72208	3.00E-04	I								1.10E+01	N	1.10E+00	N	4.10E-01	N	6.10E+02	N	2.30E+01	N
Epichlorohydrin	106898	2.00E-03	H	2.86E-04	I	9.90E-03	I	4.20E-03	I		6.80E+00	C	1.00E+00	N	3.20E-01	C	5.80E+02	C	6.50E+01	C
1,2-Epoxybutane	106887			5.71E-03	I						2.10E+02	N	2.10E+01	N	0.00E+00		0.00E+00		0.00E+00	
Ethephon (2-chloroethyl phosphonic acid)	16672870	5.00E-03	I								1.80E+02	N	1.80E+01	N	6.80E+00	N	1.00E+04	N	3.90E+02	N
Ethion	563122	5.00E-04	I								1.80E+01	N	1.80E+00	N	6.80E-01	N	1.00E+03	N	3.90E+01	N
2-Ethoxyethanol acetate	111159	3.00E-01	A								1.10E+04	N	1.10E+03	N	4.10E+02	N	6.10E+05	N	2.30E+04	N
2-Ethoxyethanol	110805	4.00E-01	H	5.71E-02	I						1.50E+04	N	2.10E+02	N	5.40E+02	N	8.20E+05	N	3.10E+04	N
Ethyl acrylate	140885					4.80E-02	H				1.40E+00	C	1.30E-01	C	6.60E-02	C	1.20E+02	C	1.30E+01	C
EPTC (S-Ethyl dipropylthiocarbamate)	759944	2.50E-02	I								9.10E+02	N	9.10E+01	N	3.40E+01	N	5.10E+04	N	2.00E+03	N
Ethyl acetate	141786	9.00E-01	I								3.30E+04	N	3.30E+03	N	1.20E+03	N	1.00E+06	N	7.00E+04	N
Ethylbenzene	100414	1.00E-01	I	2.86E-01	I				x		1.30E+03	N	1.00E+03	N	1.40E+02	N	2.00E+05	N	7.80E+03	N
Ethylene cyanohydrin	109784	3.00E-01	H								1.10E+04	N	1.10E+03	N	4.10E+02	N	6.10E+05	N	2.30E+04	N
Ethylene diamine	107153	2.00E-02	H								7.30E+02	N	7.30E+01	N	2.70E+01	N	4.10E+04	N	1.60E+03	N
Ethylene glycol	107211	2.00E+00	I								7.30E+04	N	7.30E+03	N	2.70E+03	N	1.00E+06	N	1.60E+05	N
Ethylene glycol, monobutyl ether	111762			5.71E-03	H						2.10E+02	N	2.10E+01	N	0.00E+00		0.00E+00		0.00E+00	
Ethylene oxide	75218					1.02E+00	H	3.50E-01	H		6.60E-02	C	1.80E-02	C	3.10E-03	C	5.60E+00	C	6.30E-01	C
Ethylene thiourea (ETU)	96457	8.00E-05	I			1.19E-01	H				5.70E-01	C	5.30E-02	C	2.70E-02	C	4.80E+01	C	5.40E+00	C
Ethyl ether	60297	2.00E-01	I						x		1.20E+03	N	7.30E+02	N	2.70E+02	N	4.10E+05	N	1.60E+04	N
Ethyl methacrylate	97632	9.00E-02	H								3.30E+03	N	3.30E+02	N	1.20E+02	N	1.80E+05	N	7.00E+03	N
Ethyl p-nitrophenyl phenylphosphorothioate	2104645	1.00E-05	I								3.70E-01	N	3.70E-02	N	1.40E-02	N	2.00E+01	N	7.80E-01	N
Ethylphthalyl ethyl glycolate	84720	3.00E+00	I								1.10E+05	N	1.10E+04	N	4.10E+03	N	1.00E+06	N	2.30E+05	N
Express	10120	8.00E-03	I								2.90E+02	N	2.90E+01	N	1.10E+01	N	1.60E+04	N	6.30E+02	N
Fenamiphos	22224926	2.50E-04	I								9.10E+00	N	9.10E-01	N	3.40E-01	N	5.10E+02	N	2.00E+01	N
Fluometuron	2164172	1.30E-02	I								4.70E+02	N	4.70E+01	N	1.80E+01	N	2.70E+04	N	1.00E+03	N
Fluoride	7782414	6.00E-02	I								2.20E+03	N	2.20E+02	N	8.10E+01	N	1.20E+05	N	4.70E+03	N
Fluoridone	59756604	8.00E-02	I								2.90E+03	N	2.90E+02	N	1.10E+02	N	1.60E+05	N	6.30E+03	N
Flurprimidol	56425913	2.00E-02	I								7.30E+02	N	7.30E+01	N	2.70E+01	N	4.10E+04	N	1.60E+03	N
Flutolanil	66332965	6.00E-02	I								2.20E+03	N	2.20E+02	N	8.10E+01	N	1.20E+05	N	4.70E+03	N
Fluvalinate	69409945	1.00E-02	I								3.70E+02	N	3.70E+01	N	1.40E+01	N	2.00E+04	N	7.80E+02	N

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		RfDo mg/kg/d	RfDi mg/kg/d	CPSo kg-d/mg					Industrial mg/kg	Residential mg/kg					
Folpet	133073	1.00E-01	I	3.50E-03	I		1.90E+01	C 1.80E+00	C 9.00E-01	C 1.60E+03	C 1.80E+02	C			
Fomesafen	72178020			1.90E-01	I		3.50E-01	C 3.30E-02	C 1.70E-02	C 3.00E+01	C 3.40E+00	C			
Fonofos	944229	2.00E-03	I				7.30E+01	N 7.30E+00	N 2.70E+00	N 4.10E+03	N 1.60E+02	N			
Formaldehyde	50000	2.00E-01	I			4.55E-02	I 7.30E+03	N 1.40E-01	C 2.70E+02	N 4.10E+05	N 1.60E+04	N			
Formic Acid	64186	2.00E+00	H				7.30E+04	N 7.30E+03	N 2.70E+03	N 1.00E+06	N 1.60E+05	N			
Fosetyl-al	39148248	3.00E+00	I				1.10E+05	N 1.10E+04	N 4.10E+03	N 1.00E+06	N 2.30E+05	N			
Furan	110009	1.00E-03	I				3.70E+01	N 3.70E+00	N 1.40E+00	N 2.00E+03	N 7.80E+01	N			
Furazolidone	67458			3.80E+00	H		1.80E-02	C 1.60E-03	C 8.30E-04	C 1.50E+00	C 1.70E-01	C			
Furfural	98011	3.00E-03	I 1.43E-02	A			1.10E+02	N 5.20E+01	N 4.10E+00	N 6.10E+03	N 2.30E+02	N			
Furium	531828			5.00E+01	H		1.30E-03	C 1.30E-04	C 6.30E-05	C 1.10E-01	C 1.30E-02	C			
Furmecyclox	60568050			3.00E-02	I		2.20E+00	C 2.10E-01	C 1.10E-01	C 1.90E+02	C 2.10E+01	C			
Glufosinate-ammonium	77182822	4.00E-04	I				1.50E+01	N 1.50E+00	N 5.40E-01	N 8.20E+02	N 3.10E+01	N			
Glycidaldehyde	765344	4.00E-04	I 2.86E-04	H			1.50E+01	N 1.00E+00	N 5.40E-01	N 8.20E+02	N 3.10E+01	N			
Glyphosate	1071836	1.00E-01	I				3.70E+03	N 3.70E+02	N 1.40E+02	N 2.00E+05	N 7.80E+03	N			
Haloxypop-methyl	69806402	5.00E-05	I				1.80E+00	N 1.80E-01	N 6.80E-02	N 1.00E+02	N 3.90E+00	N			
Harmony	79277273	1.30E-02	I				4.70E+02	N 4.70E+01	N 1.80E+01	N 2.70E+04	N 1.00E+03	N			
HCH (alpha)	319846			6.30E+00	I 6.30E+00	I	1.10E-02	C 9.90E-04	C 5.00E-04	C 9.10E-01	C 1.00E-01	C			
HCH (beta)	319857			1.80E+00	I 1.80E+00	I	3.70E-02	C 3.50E-03	C 1.80E-03	C 3.20E+00	C 3.50E-01	C			
HCH (gamma) Lindane	58899	3.00E-04	I	1.30E+00	H		5.20E-02	C 4.80E-03	C 2.40E-03	C 4.40E+00	C 4.90E-01	C			
HCH-technical	608731			1.80E+00	I 1.79E+00	I	3.70E-02	C 3.50E-03	C 1.80E-03	C 3.20E+00	C 3.50E-01	C			
Heptachlor	76448	5.00E-04	I	4.50E+00	I 4.55E+00	I x	2.30E-03	C 1.40E-03	C 7.00E-04	C 1.30E+00	C 1.40E-01	C			
Heptachlor epoxide	1024573	1.30E-05	I	9.10E+00	I 9.10E+00	I x	1.20E-03	C 6.90E-04	C 3.50E-04	C 6.30E-01	C 7.00E-02	C			
Hexabromobenzene	87821	2.00E-03	I			x	1.20E+01	N 7.30E+00	N 2.70E+00	N 4.10E+03	N 1.60E+02	N			
Hexachlorobenzene	118741	8.00E-04	I	1.60E+00	I 1.61E+00	I x	6.60E-03	C 3.90E-03	C 2.00E-03	C 3.60E+00	C 4.00E-01	C			
Hexachlorobutadiene	87683	2.00E-04	H	7.80E-02	I 7.70E-02	I x	1.40E-01	C 8.10E-02	C 4.00E-02	C 7.30E+01	C 8.20E+00	C			
Hexachlorocyclopentadiene	77474	7.00E-03	I 2.00E-05	H		x	1.50E-01	N 7.30E-02	N 9.50E+00	N 1.40E+04	N 5.50E+02	N			
Hexachlorodibenzo-p-dioxin mixture	19408743			6.20E+03	I 4.55E+03	I	1.10E-05	C 1.40E-06	C 5.00E-07	C 9.20E-04	C 1.00E-04	C			
Hexachloroethane	67721	1.00E-03	I	1.40E-02	I 1.40E-02	I x	7.50E-01	C 4.50E-01	C 2.30E-01	C 4.10E+02	C 4.60E+01	C			
Hexachlorophene	70304	3.00E-04	I				1.10E+01	N 1.10E+00	N 4.10E-01	N 6.10E+02	N 2.30E+01	N			
Hexahydro-1,3,5-trinitro-1,3,5-triazine	121824	3.00E-03	I	1.10E-01	I		6.10E-01	C 5.70E-02	C 2.90E-02	C 5.20E+01	C 5.80E+00	C			
1,6-Hexamethylene diisocyanate	822060		2.86E-06	I			1.00E-01	N 1.00E-02	N 0.00E+00	0.00E+00	0.00E+00				
n-Hexane	110543	6.00E-02	H 5.71E-02	I		x	3.50E+02	N 2.10E+02	N 8.10E+01	N 1.20E+05	N 4.70E+03	N			
**2-Hexanone	73663715	4.00E-02					1.50E+03	N 1.50E+02	N 5.40E+01	N 8.20E+04	N 3.10E+03	N			
Hexazinone	51235042	3.30E-02	I				1.20E+03	N 1.20E+02	N 4.50E+01	N 6.70E+04	N 2.60E+03	N			
Hydrazine, hydrazine sulfate	302012			3.00E+00	I 1.71E+01	I	2.20E-02	C 3.70E-04	C 1.10E-03	C 1.90E+00	C 2.10E-01	C			
Hydrogen chloride	7647010		5.71E-03	I			2.10E+02	N 2.10E+01	N 0.00E+00	0.00E+00	0.00E+00				
Hydrogen sulfide	7783064	3.00E-03	I 2.85E-04	I			1.10E+02	N 1.00E+00	N 4.10E+00	N 6.10E+03	N 2.30E+02	N			
Hydroquinone	123319	4.00E-02	H				1.50E+03	N 1.50E+02	N 5.40E+01	N 8.20E+04	N 3.10E+03	N			
Imazalil	35554440	1.30E-02	I				4.70E+02	N 4.70E+01	N 1.80E+01	N 2.70E+04	N 1.00E+03	N			
Imazaquin	81335377	2.50E-01	I				9.10E+03	N 9.10E+02	N 3.40E+02	N 5.10E+05	N 2.00E+04	N			
Iprodione	36734197	4.00E-02	I				1.50E+03	N 1.50E+02	N 5.40E+01	N 8.20E+04	N 3.10E+03	N			

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Risk-Based Concentrations															
		RfDo		RfDi	CPSo	CPSi	V	Tap		Ambient		Fish	Soil Ingestion		
Contaminant	CAS	mg/kg/d		mg/kg/d	kg·d/mg	kg·d/mg	O	Water		Air		mg/kg	Industrial	Residential	
							C	µg/L		µg/m3			mg/kg	mg/kg	
Iron	7439896	3.00E-01	E					1.10E+04	N	1.10E+03	N	4.10E+02	N	2.30E+04	
Isobutanol	78831	3.00E-01	I				x	1.80E+03	N	1.10E+03	N	4.10E+02	N	2.30E+04	
Isophorone	78591	2.00E-01	I		9.50E-04	I		7.10E+01	C	6.60E+00	C	3.30E+00	C	6.70E+02	
Isopropalin	33820530	1.50E-02	I					5.50E+02	N	5.50E+01	N	2.00E+01	N	1.20E+03	
Isopropyl methyl phosphonic acid	1832548	1.00E-01	I					3.70E+03	N	3.70E+02	N	1.40E+02	N	7.80E+03	
Isoxaben	82558507	5.00E-02	I					1.80E+03	N	1.80E+02	N	6.80E+01	N	3.90E+03	
Kepone	143500				1.80E+01	E		3.70E-03	C	3.50E-04	C	1.80E-04	C	3.50E-02	
Lactofen	77501634	2.00E-03	I					7.30E+01	N	7.30E+00	N	2.70E+00	N	1.60E+02	
Linuron	330552	2.00E-03	I					7.30E+01	N	7.30E+00	N	2.70E+00	N	1.60E+02	
Lithium	7439932	2.00E-02	E					7.30E+02	N	7.30E+01	N	2.70E+01	N	1.60E+03	
Londax	83056996	2.00E-01	I					7.30E+03	N	7.30E+02	N	2.70E+02	N	1.60E+04	
Malathion	121755	2.00E-02	I					7.30E+02	N	7.30E+01	N	2.70E+01	N	1.60E+03	
Maleic anhydride	108316	1.00E-01	I					3.70E+03	N	3.70E+02	N	1.40E+02	N	7.80E+03	
Maleic hydrazide	123331	5.00E-01	I					1.80E+04	N	1.80E+03	N	6.80E+02	N	3.90E+04	
Malononitrile	109773	2.00E-05	H					7.30E-01	N	7.30E-02	N	2.70E-02	N	1.60E+00	
Mancozeb	8018017	3.00E-02	H					1.10E+03	N	1.10E+02	N	4.10E+01	N	2.30E+03	
Maneb	12427382	5.00E-03	I					1.80E+02	N	1.80E+01	N	6.80E+00	N	3.90E+02	
Manganese and compounds	7439965	2.30E-02	I	1.43E-05	I			8.40E+02	N	5.20E-02	N	3.10E+01	N	1.80E+03	
Mephosfolan	950107	9.00E-05	H					3.30E+00	N	3.30E-01	N	1.20E-01	N	7.00E+00	
Mepiquat chloride	24307264	3.00E-02	I					1.10E+03	N	1.10E+02	N	4.10E+01	N	2.30E+03	
Mercuric chloride	7487947	3.00E-04	I					1.10E+01	N	1.10E+00	N	4.10E-01	N	2.30E+01	
Mercury (inorganic)	7439976	3.00E-04	W	8.57E-05	I			1.10E+01	N	3.10E-01	N	4.10E-01	N	2.30E+01	
Mercury (methyl)	22967926	1.00E-04	I					3.70E+00	N	3.70E-01	N	1.40E-01	N	7.80E+00	
Merphos	150505	3.00E-05	I					1.10E+00	N	1.10E-01	N	4.10E-02	N	2.30E+00	
Merphos oxide	78488	3.00E-05	I					1.10E+00	N	1.10E-01	N	4.10E-02	N	2.30E+00	
Metalaxyl	57837191	6.00E-02	I					2.20E+03	N	2.20E+02	N	8.10E+01	N	4.70E+03	
Methacrylonitrile	126987	1.00E-04	I	2.00E-04	A			3.70E+00	N	7.30E-01	N	1.40E-01	N	7.80E+00	
Methamidophos	10265926	5.00E-05	I					1.80E+00	N	1.80E-01	N	6.80E-02	N	3.90E+00	
Methanol	67561	5.00E-01	I					1.80E+04	N	1.80E+03	N	6.80E+02	N	3.90E+04	
Methidathion	950378	1.00E-03	I					3.70E+01	N	3.70E+00	N	1.40E+00	N	7.80E+01	
Methomyl	16752775	2.50E-02	I					9.10E+02	N	9.10E+01	N	3.40E+01	N	2.00E+03	
Methoxychlor	72435	5.00E-03	I					1.80E+02	N	1.80E+01	N	6.80E+00	N	3.90E+02	
2-Methoxyethanol acetate	110496	2.00E-03	A					7.30E+01	N	7.30E+00	N	2.70E+00	N	1.60E+02	
2-Methoxyethanol	109864	1.00E-03	A	5.71E-03	I			3.70E+01	N	2.10E+01	N	1.40E+00	N	7.80E+01	
2-Methoxy-5-nitroaniline	99592				4.60E-02	H		1.50E+00	C	1.40E-01	C	6.90E-02	C	1.40E+01	
Methyl acetate	79209	1.00E+00	H					3.70E+04	N	3.70E+03	N	1.40E+03	N	7.80E+04	
Methyl acrylate	96333	3.00E-02	A					1.10E+03	N	1.10E+02	N	4.10E+01	N	2.30E+03	
2-Methylaniline hydrochloride	636215				1.80E-01	H		3.70E-01	C	3.50E-02	C	1.80E-02	C	3.50E+00	
2-Methylaniline	95534				2.40E-01	H		2.80E-01	C	2.60E-02	C	1.30E-02	C	2.70E+00	
Methyl chlorocarbonate	79221	1.00E+00	W					3.70E+04	N	3.70E+03	N	1.40E+03	N	7.80E+04	
4-(2-Methyl-4-chlorophenoxy) butyric acid	94815	1.00E-02	I					3.70E+02	N	3.70E+01	N	1.40E+01	N	7.80E+02	

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										Risk-Based Concentrations							
								V O C	Tap Water µg/L	Ambient Air µg/m3	Fish mg/kg		Soil Ingestion				
Contaminant	CAS	RfDo mg/kg/d	RfDi mg/kg/d			CPSo kg-d/mg	CPSi kg-d/mg						Industrial mg/kg	Residential mg/kg			
2-Methyl-4-chlorophenoxyacetic acid	94746	5.00E-04	I						1.80E+01	N	1.80E+00	N	6.80E-01	N	1.00E+03	N	
2-(2-Methyl-14-chlorophenoxy)propionic acid	93652	1.00E-03	I						3.70E+01	N	3.70E+00	N	1.40E+00	N	2.00E+03	N	
Methylcyclohexane	108872		8.57E-01	H					3.10E+04	N	3.10E+03	N	0.00E+00		0.00E+00		
Methylene bromide	74953	1.00E-02	A					x	6.10E+01	N	3.70E+01	N	1.40E+01	N	2.00E+04	N	
Methylene chloride	75092	6.00E-02	I	8.57E-01	II	7.50E-03	I	1.64E-03	I	x	4.10E+00	C	3.80E+00	C	4.20E-01	C	
4,4'-Methylene bis(2-chloroaniline)	101144	7.00E-04	H			1.30E-01	H	1.30E-01	H		5.20E-01	C	4.80E-02	C	4.40E+01	C	
4,4'-Methylenebisbenzeneamine	101779					2.50E-01	W		2.70E-01	C	2.50E-02	C	1.30E-02	C	2.30E+01	C	
4,4'-Methylene bis(N,N'-dimethyl)aniline	101611					4.60E-02	I		1.50E+00	C	1.40E-01	C	6.90E-02	C	1.20E+02	C	
4,4'-Methylenediphenyl isocyanate	101688		5.71E-06	I				x	3.50E-02	N	2.10E-02	N	0.00E+00		0.00E+00		
Methyl ethyl ketone	78933	6.00E-01	I	2.86E-01	I			x	1.90E+03	N	1.00E+03	N	8.10E+02	N	1.00E+06	N	
Methyl hydrazine	60344					1.10E+00	W		6.10E-02	C	5.70E-03	C	2.90E-03	C	5.20E+00	C	
Methyl isobutyl ketone	108101	8.00E-02	H	2.29E-02	A				2.90E+03	N	8.40E+01	N	1.10E+02	N	1.60E+05	N	
Methyl methacrylate	80626	8.00E-02	H						2.90E+03	N	2.90E+02	N	1.10E+02	N	1.60E+05	N	
2-Methyl-5-nitroaniline	99558					3.30E-02	H		2.00E+00	C	1.90E-01	C	9.60E-02	C	1.70E+02	C	
Methyl parathion	298000	2.50E-04	I						9.10E+00	N	9.10E-01	N	3.40E-01	N	5.10E+02	N	
2-Methylphenol (o-cresol)	95487	5.00E-02	I						1.80E+03	N	1.80E+02	N	6.80E+01	N	1.00E+05	N	
3-Methylphenol (m-cresol)	103394	5.00E-02	I						1.80E+03	N	1.80E+02	N	6.80E+01	N	1.00E+05	N	
4-Methylphenol (p-cresol)	106445	5.00E-03	H						1.80E+02	N	1.80E+01	N	6.80E+00	N	1.00E+04	N	
Methyl styrene (mixture)	25013154	6.00E-03	A	1.14E-02	A			x	6.00E+01	N	4.20E+01	N	8.10E+00	N	1.20E+04	N	
Methyl styrene (alpha)	98839	7.00E-02	A					x	4.30E+02	N	2.60E+02	N	9.50E+01	N	1.40E+05	N	
Methyl tertbutyl ether (MTBE)	1634044	5.00E-03	E	8.57E-01	I			x	1.80E+02	N	3.10E+03	N	6.80E+00	N	1.00E+04	N	
Metolaclor (Dual)	51218452	1.50E-01	H						5.50E+03	N	5.50E+02	N	2.00E+02	N	3.10E+05	N	
Metribuzin	21087649	2.50E-02	I						9.10E+02	N	9.10E+01	N	3.40E+01	N	5.10E+04	N	
Mirex	2385855	2.00E-04	I			1.80E+00	W		3.70E-02	C	3.50E-03	C	1.80E-03	C	3.20E+00	C	
Molinate	2212671	2.00E-03	I						7.30E+01	N	7.30E+00	N	2.70E+00	N	4.10E+03	N	
Molybdenum	7439987	5.00E-03	I						1.80E+02	N	1.80E+01	N	6.80E+00	N	1.00E+04	N	
Monochloramine	10599903	1.00E-01	I						3.70E+03	N	3.70E+02	N	1.40E+02	N	2.00E+05	N	
Naled	300765	2.00E-03	I						7.30E+01	N	7.30E+00	N	2.70E+00	N	4.10E+03	N	
2-Naphthylamine	91598					1.30E+02	E		5.20E-04	C	4.80E-05	C	2.40E-05	C	4.40E-02	C	
Napropamide	15299997	1.00E-01	I						3.70E+03	N	3.70E+02	N	1.40E+02	N	2.00E+05	N	
Nickel refinery dust	0						8.40E-01	I	0.00E+00		7.50E-03	C	0.00E+00		0.00E+00		
Nickel and compounds	7440020	2.00E-02	I						7.30E+02	N	7.30E+01	N	2.70E+01	N	4.10E+04	N	
Nickel subsulfide	12035722						1.70E+00	I	0.00E+00		3.70E-03	C	0.00E+00		0.00E+00		
Nitrapyrin	1929824	1.50E-03	W						5.50E+01	N	5.50E+00	N	2.00E+00	N	3.10E+03	N	
Nitrate	14797558	1.60E+00	I						5.80E+04	N	5.80E+03	N	2.20E+03	N	1.00E+06	N	
Nitric oxide	10102439	1.00E-01	W						3.70E+03	N	3.70E+02	N	1.40E+02	N	2.00E+05	N	
Nitrite	14797650	1.00E-01	I						3.70E+03	N	3.70E+02	N	1.40E+02	N	2.00E+05	N	
2-Nitroaniline	88744	6.00E-05	W	5.71E-05	H				2.20E+00	N	2.10E-01	N	8.10E-02	N	1.20E+02	N	
3-Nitroaniline	99092	3.00E-03	O						1.10E+02	N	1.10E+01	N	4.10E+00	N	6.10E+03	N	
4-Nitroaniline	100016	3.00E-03	O						1.10E+02	N	1.10E+01	N	4.10E+00	N	6.10E+03	N	
Nitrobenzene	98953	5.00E-04	I	5.71E-04	A			x	3.40E+00	N	2.10E+00	N	6.80E-01	N	1.00E+03	N	

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Nitrofurantoin	67209	7.00E-02	H				2.60E+03	N	2.60E+02	N	9.50E+01	N	1.40E+05	N	5.50E+03	N			
Nitrofurazone	59870			1.50E+00	H	9.40E+00	W	4.50E-02	C	6.70E-04	C	2.10E-03	C	3.80E+00	C	4.30E-01	C		
Nitrogen dioxide	10102440	1.00E+00	W				3.70E+04	N	3.70E+03	N	1.40E+03	N	1.00E+06	N	7.80E+04	N			
Nitroguanidine	556887	1.00E-01	I				3.70E+03	N	3.70E+02	N	1.40E+02	N	2.00E+05	N	7.80E+03	N			
**4-Nitrophenol	100027	8.00E-03	E				2.90E+02	N	2.90E+01	N	1.10E+01	N	1.60E+04	N	6.30E+02	N			
2-Nitropropane	79469		5.71E-03	I		9.40E+00	H	2.10E+02	N	6.70E-04	C	0.00E+00		0.00E+00		0.00E+00			
N-Nitrosodi-n-butylamine	924163			5.40E+00	I	5.60E+00	I	1.20E-02	C	1.10E-03	C	5.80E-04	C	1.10E+00	C	1.20E-01	C		
N-Nitrosodiethanolamine	1116547			2.80E+00	I		2.40E-02	C	2.20E-03	C	1.10E-03	C	2.00E+00	C	2.30E-01	C			
N-Nitrosodiethylamine	55185			1.50E+02	I	1.51E+02	I	4.50E-04	C	4.10E-05	C	2.10E-05	C	3.80E-02	C	4.30E-03	C		
N-Nitrosodimethylamine	62759			5.10E+01	I	4.90E+01	I	1.30E-03	C	1.30E-04	C	6.20E-05	C	1.10E-01	C	1.30E-02	C		
N-Nitrosodiphenylamine	86306			4.90E-03	I		1.40E+01	C	1.30E+00	C	6.40E-01	C	1.20E+03	C	1.30E+02	C			
N-Nitroso di-n-propylamine	621647			7.00E+00	I		9.60E-03	C	8.90E-04	C	4.50E-04	C	8.20E-01	C	9.10E-02	C			
N-Nitroso-N-ethylurea	759739			1.40E+02	II		4.80E-04	C	4.50E-05	C	2.30E-05	C	4.10E-02	C	4.60E-03	C			
N-Nitroso-N-methylethylamine	10595956			2.20E+01	I		3.10E-03	C	2.80E-04	C	1.40E-04	C	2.60E-01	C	2.90E-02	C			
N-Nitrosopyrrolidine	930552			2.10E+00	I	2.13E+00	I	3.20E-02	C	2.90E-03	C	1.50E-03	C	2.70E+00	C	3.00E-01	C		
m-Nitrotoluene	99081	2.00E-02	II				1.20E+02	N	7.30E+01	N	2.70E+01	N	4.10E+03	N	1.60E+03	N			
o-Nitrotoluene	88722	1.00E-02	II				6.10E+01	N	3.70E+01	N	1.40E+01	N	2.00E+04	N	7.80E+02	N			
p-Nitrotoluene	99990	1.00E-02	II				6.10E+01	N	3.70E+01	N	1.40E+01	N	2.00E+04	N	7.80E+02	N			
Norflurazon	27314132	4.00E-02	I				1.50E+03	N	1.50E+02	N	5.40E+01	N	8.20E+04	N	3.10E+03	N			
NuStar	85509199	7.00E-04	I				2.60E+01	N	2.60E+00	N	9.50E-01	N	1.40E+03	N	5.50E+01	N			
Octabromodiphenyl ether	32536520	3.00E-03	I				1.10E+02	N	1.10E+01	N	4.10E+00	N	6.10E+03	N	2.30E+02	N			
Octahydro-1357-tetranitro-1357-tetrazocine	2691410	5.00E-02	I				1.80E+03	N	1.80E+02	N	6.80E+01	N	1.00E+05	N	3.90E+03	N			
Octamethylpyrophosphoramide	152169	2.00E-03	II				7.30E+01	N	7.30E+00	N	2.70E+00	N	4.10E+03	N	1.60E+02	N			
Oryzalin	19044883	5.00E-02	I				1.80E+03	N	1.80E+02	N	6.80E+01	N	1.00E+05	N	3.90E+03	N			
Oxadiazon	19666309	5.00E-03	I				1.80E+02	N	1.80E+01	N	6.80E+00	N	1.00E+04	N	3.90E+02	N			
Oxamyl	23135220	2.50E-02	I				9.10E+02	N	9.10E+01	N	3.40E+01	N	5.10E+04	N	2.00E+03	N			
Oxyfluorfen	42874033	3.00E-03	I				1.10E+02	N	1.10E+01	N	4.10E+00	N	6.10E+03	N	2.30E+02	N			
Paclobutrazol	76738620	1.30E-02	I				4.70E+02	N	4.70E+01	N	1.80E+01	N	2.70E+04	N	1.00E+03	N			
Paraquat	1910425	4.50E-03	I				1.60E+02	N	1.60E+01	N	6.10E+00	N	9.20E+03	N	3.50E+02	N			
Parathion	56382	6.00E-03	II				2.20E+02	N	2.20E+01	N	8.10E+00	N	1.20E+04	N	4.70E+02	N			
Pebulate	1114712	5.00E-02	II				1.80E+03	N	1.80E+02	N	6.80E+01	N	1.00E+05	N	3.90E+03	N			
Pendimethalin	40487421	4.00E-02	I				1.50E+03	N	1.50E+02	N	5.40E+01	N	8.20E+04	N	3.10E+03	N			
Pentabromo-6-chlorocyclohexane	87843			2.30E-02	II		2.90E+00	C	2.70E-01	C	1.40E-01	C	2.50E+02	C	2.80E+01	C			
Pentabromodiphenyl ether	32534819	2.00E-03	I				7.30E+01	N	7.30E+00	N	2.70E+00	N	4.10E+03	N	1.60E+02	N			
Pentachlorobenzene	608935	8.00E-04	I				4.90E+00	N	2.90E+00	N	1.10E+00	N	1.60E+03	N	6.30E+01	N			
Pentachloronitrobenzene	82688	3.00E-03	I		2.60E-01	II	4.10E-02	C	2.40E-02	C	1.20E-02	C	2.20E+01	C	2.50E+00	C			
Pentachlorophenol	87865	3.00E-02	I		1.20E-01	I	5.60E-01	C	5.20E-02	C	2.60E-02	C	4.80E+01	C	5.30E+00	C			
Permethrin	52645531	5.00E-02	I				1.80E+03	N	1.80E+02	N	6.80E+01	N	1.00E+05	N	3.90E+03	N			
Phenmedipham	13684634	2.50E-01	I				9.10E+03	N	9.10E+02	N	5.10E+02	N	5.10E+05	N	2.00E+04	N			
Phenol	108952	6.00E-01	I				2.20E+04	N	2.20E+03	N	8.10E+02	N	1.00E+06	N	4.70E+04	N			
m-Phenylenediamine	108452	6.00E-03	I				2.20E+02	N	2.20E+01	N	8.10E+00	N	1.20E+04	N	4.70E+02	N			

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Contaminant	CAS	Risk-Based Concentrations														
		RfDo mg/kg/d	RfDi mg/kg/d	CPSo kg-d/mg	CPSi kg-d/mg	V O C	Tap Water µg/L	Ambient Air µg/m3	Fish mg/kg	Soil Ingestion						
										Industrial mg/kg	Residential mg/kg					
**o-Phenylenediamine	95545	6.00E-03	E	4.70E-02	H		1.40E+00	C	1.30E-01	C	6.70E-02	C	1.20E+02	C	1.40E+01	C
p-Phenylenediamine	106503	1.90E-01	H				6.90E+03	N	6.90E+02	N	2.60E+02	N	3.90E+05	N	1.50E+04	N
Phenylmercuric acetate	62384	8.00E-05	I				2.90E+00	N	2.90E-01	N	1.10E-01	N	1.60E+02	N	6.30E+00	N
2-Phenylphenol	90437			1.94E-03	H		3.50E+01	C	3.20E+00	C	1.60E+00	C	3.00E+03	C	3.30E+02	C
Phorate	298022	2.00E-04	H				7.30E+00	N	7.30E-01	N	2.70E-01	N	4.10E+02	N	1.60E+01	N
Phosmet	732116	2.00E-02	I				7.30E+02	N	7.30E+01	N	2.70E+01	N	4.10E+04	N	1.60E+03	N
Phosphine	7803512	3.00E-04	I	8.57E-05	I		1.10E+01	N	3.10E-01	N	4.10E-01	N	6.10E+02	N	2.30E+01	N
Phosphoric acid	7664382			2.86E-03	I		1.00E+02	N	1.00E+01	N	0.00E+00		0.00E+00		0.00E+00	
Phosphorus (white)	7723140	2.00E-05	I				7.30E-01	N	7.30E-02	N	2.70E-02	N	4.10E+01	N	1.60E+00	N
p-Phthalic acid	100210	1.00E+00	H				3.70E+04	N	3.70E+03	N	1.40E+03	N	1.00E+06	N	7.80E+04	N
Phthalic anhydride	85449	2.00E+00	I	3.43E-02	H		7.30E+04	N	1.30E+02	N	2.70E+03	N	1.00E+06	N	1.60E+05	N
Picloram	1918021	7.00E-02	I				2.60E+03	N	2.60E+02	N	9.50E+01	N	1.40E+05	N	5.50E+03	N
Pirimiphos-methyl	29232937	1.00E-02	I				3.70E+02	N	3.70E+01	N	1.40E+01	N	2.00E+04	N	7.80E+02	N
Polybrominated biphenyls	0	7.00E-06	H	8.90E+00	H		7.60E-03	C	7.00E-04	C	3.50E-04	C	6.40E-01	C	7.20E-02	C
**Polychlorinated biphenyls (PCBs)	1336363			2.00E+00	I	4.00E-01	I		3.40E-02	C	1.60E-02	C	2.90E+00	C	3.20E-01	C
Aroclor 1016	12674112	7.00E-05	I				2.60E+00	N	2.60E-01	N	9.50E-02	N	1.40E+02	N	5.50E+00	N
Aroclor 1254	11097691	2.00E-05	I				7.30E-01	N	7.30E-02	N	2.70E-02	N	4.10E+01	N	1.60E+00	N
Polychlorinated terphenyls (PCTs)	0			4.50E+00	E		1.50E-02	C	1.40E-03	C	7.00E-04	C	1.30E+00	C	1.40E-01	C
Polynuclear aromatic hydrocarbons	0						0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00	
Acenaphthene	83329	6.00E-02	I				2.20E+03	N	2.20E+02	N	8.10E+01	N	1.20E+05	N	4.70E+03	N
Anthracene	120127	3.00E-01	I				1.10E+04	N	1.10E+03	N	4.10E+02	N	6.10E+05	N	2.30E+04	N
**Benz[a]anthracene	56553			7.30E-01	E	3.10E-01	E		9.20E-02	C	2.00E-02	C	4.30E-03	C	7.80E+00	C
**Benzo[b]fluoranthene	205992			7.30E-01	E	3.10E-01	E		9.20E-02	C	2.00E-02	C	4.30E-03	C	7.80E+00	C
**Benzo[k]fluoranthene	207089			7.30E-02	E	3.10E-02	E		9.20E-01	C	2.00E-01	C	4.30E-02	C	7.80E+01	C
**Benzo[a]pyrene	50328			7.30E+00	I	3.10E+00	E		9.20E-03	C	2.00E-03	C	4.30E-04	C	7.80E-01	C
Carbazole	86748			2.00E-02	H		3.40E+00	C	3.10E-01	C	1.60E-01	C	2.90E+02	C	3.20E+01	C
**Chrysene	218019			7.30E-03	E	3.10E-03	E		9.20E+00	C	2.00E+00	C	4.30E-01	C	7.80E+02	C
**Dibenz[ah]anthracene	53703			7.30E+00	E	3.10E+00	E		9.20E-03	C	2.00E-03	C	4.30E-04	C	7.80E-01	C
Fluoranthene	206440	4.00E-02	I				1.50E+03	N	1.50E+02	N	5.40E+01	N	8.20E+04	N	3.10E+03	N
Fluorene	86737	4.00E-02	I				1.50E+03	N	1.50E+02	N	5.40E+01	N	8.20E+04	N	3.10E+03	N
**Indeno[1,2,3-cd]pyrene	193395			7.30E-01	E	3.10E-01	E		9.20E-02	C	2.00E-02	C	4.30E-03	C	7.80E+00	C
**2-Methylnaphthalene	91576	4.00E-02	E				1.50E+03	N	1.50E+02	N	5.40E+01	N	8.20E+04	N	3.10E+03	N
Naphthalene	91203	4.00E-02	W				1.50E+03	N	1.50E+02	N	5.40E+01	N	8.20E+04	N	3.10E+03	N
Pyrene	129000	3.00E-02	I				1.10E+03	N	1.10E+02	N	4.10E+01	N	6.10E+04	N	2.30E+03	N
Prochloraz	67747095	9.00E-03	I	1.50E-01	I		4.50E-01	C	4.20E-02	C	2.10E-02	C	3.80E+01	C	4.30E+00	C
Profluralin	26399360	6.00E-03	H				2.20E+02	N	2.20E+01	N	8.10E+00	N	1.20E+04	N	4.70E+02	N
Prometon	1610180	1.50E-02	I				5.50E+02	N	5.50E+01	N	2.00E+01	N	3.10E+04	N	1.20E+03	N
Prometryn	7287196	4.00E-03	I				1.50E+02	N	1.50E+01	N	5.40E+00	N	8.20E+03	N	3.10E+02	N
Pronamide	23950585	7.50E-02	I				2.70E+03	N	2.70E+02	N	1.00E+02	N	1.50E+05	N	5.90E+03	N
Propachlor	1918167	1.30E-02	I				4.70E+02	N	4.70E+01	N	1.80E+01	N	2.70E+04	N	1.00E+03	N
Propanil	709988	5.00E-03	I				1.80E+02	N	1.80E+01	N	6.80E+00	N	1.00E+04	N	3.90E+02	N

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Contaminant	CAS	Risk-Based Concentrations												C	N	C	N	C	N
		RfDo mg/kg/d	RfDi mg/kg/d	CPSo kg-d/mg	CPSi kg-d/mg	V O	Tap Water µg/L	Ambient Air µg/m3	Fish mg/kg	Soil Ingestion									
										Industrial mg/kg	Residential mg/kg								
Propargite	2312358	2.00E-02	I					7.30E+02	N	7.30E+01	N	2.70E+01	N	4.10E+04	N	1.60E+03	N		
Propargyl alcohol	107197	2.00E-03	I					7.30E+01	N	7.30E+00	N	2.70E+00	N	4.10E+03	N	1.60E+02	N		
Propazine	139402	2.00E-02	I					7.30E+02	N	7.30E+01	N	2.70E+01	N	4.10E+04	N	1.60E+03	N		
Propham	122429	2.00E-02	I					7.30E+02	N	7.30E+01	N	2.70E+01	N	4.10E+04	N	1.60E+03	N		
Propiconazole	60207901	1.30E-02	I					4.70E+02	N	4.70E+01	N	1.80E+01	N	2.70E+04	N	1.00E+03	N		
**n-Propylbenzene	98066	1.00E-02	E					6.10E+01	N	3.70E+01	N	1.40E+01	N	2.00E+04	N	7.80E+02	N		
Propylene glycol	57556	2.00E+01	H					7.30E+05	N	7.30E+04	N	2.70E+04	N	1.00E+06	N	1.00E+06	N		
Propylene glycol, monoethyl ether	52125538	7.00E-01	H					2.60E+04	N	2.60E+03	N	9.50E+02	N	1.00E+06	N	5.50E+04	N		
Propylene glycol, monomethyl ether	107982	7.00E-01	H	5.71E-01	I			2.60E+04	N	2.10E+03	N	9.50E+02	N	1.00E+06	N	5.50E+04	N		
Propylene oxide	75569			8.57E-03	I	2.40E-01	I	1.29E-02	I	2.80E-01	C	4.90E-01	C	2.40E+01	C	2.70E+00	C		
Pursuit	81335775	2.50E-01	I					9.10E+03	N	9.10E+02	N	3.40E+02	N	5.10E+05	N	2.00E+04	N		
Pydrin	51630581	2.50E-02	I					9.10E+02	N	9.10E+01	N	3.40E+01	N	5.10E+04	N	2.00E+03	N		
Pyridine	110861	1.00E-03	I					3.70E+01	N	3.70E+00	N	1.40E+00	N	2.00E+03	N	7.80E+01	N		
Quinalphos	13593038	5.00E-04	I					1.80E+01	N	1.80E+00	N	6.80E-01	N	1.00E+03	N	3.90E+01	N		
Quinoline	91225				1.20E+01	H		5.60E-03	C	5.20E-04	C	2.60E-04	C	4.80E-01	C	5.30E-02	C		
Resmethrin	10463868	3.00E-02	I					1.10E+03	N	1.10E+02	N	4.10E+01	N	6.10E+04	N	2.30E+03	N		
Ronnel	299843	5.00E-02	H					1.80E+03	N	1.80E+02	N	6.80E+01	N	1.00E+05	N	3.90E+03	N		
Rotenone	83794	4.00E-03	I					1.50E+02	N	1.50E+01	N	5.40E+00	N	8.20E+03	N	3.10E+02	N		
Savey	78587050	2.50E-02	I					9.10E+02	N	9.10E+01	N	3.40E+01	N	5.10E+04	N	2.00E+03	N		
Selenious Acid	7783008	5.00E-03	I					1.80E+02	N	1.80E+01	N	6.80E+00	N	1.00E+04	N	3.90E+02	N		
Selenium	7782492	5.00E-03	I					1.80E+02	N	1.80E+01	N	6.80E+00	N	1.00E+04	N	3.90E+02	N		
Selenourea	630104	5.00E-03	H					1.80E+02	N	1.80E+01	N	6.80E+00	N	1.00E+04	N	3.90E+02	N		
Sethoxydim	74051802	9.00E-02	I					3.30E+03	N	3.30E+02	N	1.20E+02	N	1.80E+05	N	7.00E+03	N		
Silver and compounds	7440224	5.00E-03	I					1.80E+02	N	1.80E+01	N	6.80E+00	N	1.00E+04	N	3.90E+02	N		
Simazine	122349	5.00E-03	I			1.20E-01	H	5.60E-01	C	5.20E-02	C	2.60E-02	C	4.80E+01	C	5.30E+00	C		
Sodium azide	26628228	4.00E-03	I					1.50E+02	N	1.50E+01	N	5.40E+00	N	8.20E+03	N	3.10E+02	N		
Sodium diethyldithiocarbamate	148185	3.00E-02	I			2.70E-01	H	2.50E-01	C	2.30E-02	C	1.20E-02	C	2.10E+01	C	2.40E+00	C		
Sodium fluoroacetate	62748	2.00E-05	I					7.30E-01	N	7.30E-02	N	2.70E-02	N	4.10E+01	N	1.60E+00	N		
Sodium metavanadate	13718268	1.00E-03	H					3.70E+01	N	3.70E+00	N	1.40E+00	N	2.00E+03	N	7.80E+01	N		
Strontium, stable	7440246	6.00E-01	I					2.20E+04	N	2.20E+03	N	8.10E+02	N	1.00E+06	N	4.70E+04	N		
Strychnine	57249	3.00E-04	I					1.10E+01	N	1.10E+00	N	4.10E-01	N	6.10E+02	N	2.30E+01	N		
Styrene	100425	2.00E-01	I	2.86E-01	I			1.60E+03	N	1.00E+03	N	2.70E+02	N	4.10E+05	N	1.60E+04	N		
Systhane	88671890	2.50E-02	I					9.10E+02	N	9.10E+01	N	3.40E+01	N	5.10E+04	N	2.00E+03	N		
**2,3,7,8-TCDD (dioxin)	1746016				1.50E+05	H	1.50E+05	H	4.50E-07	C	4.20E-08	C	0.00E+00	C	3.80E-05	C	4.30E-06	C	
Tebuthiuron	34014181	7.00E-02	I					2.60E+03	N	2.60E+02	N	9.50E+01	N	1.40E+05	N	5.50E+03	N		
Temephos	3383968	2.00E-02	H					7.30E+02	N	7.30E+01	N	2.70E+01	N	4.10E+04	N	1.60E+03	N		
Terbacil	5902512	1.30E-02	I					4.70E+02	N	4.70E+01	N	1.80E+01	N	2.70E+04	N	1.00E+03	N		
Terbufos	13071799	2.50E-05	H					9.10E-01	N	9.10E-02	N	3.40E-02	N	5.10E+01	N	2.00E+00	N		
Terbutryn	886500	1.00E-03	I					3.70E+01	N	3.70E+00	N	1.40E+00	N	2.00E+03	N	7.80E+01	N		
1,2,4,5-Tetrachlorobenzene	95943	3.00E-04	I					1.80E+00	N	1.10E+00	N	4.10E-01	N	6.10E+02	N	2.30E+01	N		
1,1,1,2-Tetrachloroethane	630206	3.00E-02	I			2.60E-02	I	2.59E-02	I	4.10E-01	C	2.40E-01	C	2.20E+02	C	2.50E+01	C		

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Contaminant	CAS	RfDo mg/kg/d	RfDi mg/kg/d	CPSo kg-d/mg		CPSi kg-d/mg		V O C	Tap Water µg/L	Ambient Air µg/m3		Fish mg/kg		Industrial mg/kg		Residential mg/kg			
1,1,2,2-Tetrachloroethane	79345			2.00E-01	I	2.03E-01	I	x	5.20E-02	C	3.10E-02	C	1.60E-02	C	2.90E+01	C	3.20E+00	C	
Tetrachloroethylene (PCE)	127184	1.00E-02	I	5.20E-02	E	2.03E-03	E	x	1.10E+00	C	3.10E+00	C	6.10E-02	C	1.10E+02	C	1.20E+01	C	
2,3,4,6-Tetrachlorophenol	58902	3.00E-02	I						1.10E+03	N	1.10E+02	N	4.10E+01	N	6.10E+04	N	2.30E+03	N	
p,a,a-Tetrachlorotoluene	5216251			2.00E+01	H			x	5.30E-04	C	3.10E-04	C	1.60E-04	C	2.90E-01	C	3.20E-02	C	
Tetrachlorovinphos	961115	3.00E-02	I	2.40E-02	H				2.80E+00	C	2.60E-01	C	1.30E-01	C	2.40E+02	C	2.70E+01	C	
Tetraethyldithiopyrophosphate	3689245	5.00E-04	I						1.80E+01	N	1.80E+00	N	6.80E-01	N	1.00E+03	N	3.90E+01	N	
Tetraethyl lead	78002	1.00E-07	I						3.70E-03	N	3.70E-04	N	1.40E-04	N	2.00E-01	N	7.80E-03	N	
1,1,1,2-Tetrafluoroethane	811972		I	2.29E+01				x	1.40E+05	N	8.40E+04	N	0.00E+00		0.00E+00		0.00E+00		
Thallic oxide	1314325	7.00E-05	W						2.60E+00	N	2.60E-01	N	9.50E-02	N	1.40E+02	N	5.50E+00	N	
Thallium	0								0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		
Thallium acetate	563688	9.00E-05	I						3.30E+00	N	3.30E-01	N	1.20E-01	N	1.80E+02	N	7.00E+00	N	
Thallium carbonate	6533739	8.00E-05	I						2.90E+00	N	2.90E-01	N	1.10E-01	N	1.60E+02	N	6.30E+00	N	
Thallium chloride	7791120	8.00E-05	I						2.90E+00	N	2.90E-01	N	1.10E-01	N	1.60E+02	N	6.30E+00	N	
Thallium nitrate	10102451	9.00E-05	I						3.30E+00	N	3.30E-01	N	1.20E-01	N	1.80E+02	N	7.00E+00	N	
Thallium selenite	12039520	9.00E-05	W						3.30E+00	N	3.30E-01	N	1.20E-01	N	1.80E+02	N	7.00E+00	N	
Thallium sulfate	7446186	8.00E-05	I						2.90E+00	N	2.90E-01	N	1.10E-01	N	1.60E+02	N	6.30E+00	N	
Thiobencarb	28249776	1.00E-02	I						3.70E+02	N	3.70E+01	N	1.40E+01	N	2.00E+04	N	7.80E+02	N	
2-(Thiocyanomethylthio)-benzothiazole	21564170	3.00E-02	H						1.10E+03	N	1.10E+02	N	4.10E+01	N	6.10E+04	N	2.30E+03	N	
Thiofanox	39196184	3.00E-04	H						1.10E+01	N	1.10E+00	N	4.10E-01	N	6.10E+02	N	2.30E+01	N	
Thiophanate-methyl	23564058	8.00E-02	I						2.90E+03	N	2.90E+02	N	1.10E+02	N	1.60E+05	N	6.30E+03	N	
Thiram	137268	5.00E-03	I						1.80E+02	N	1.80E+01	N	6.80E+00	N	1.00E+04	N	3.90E+02	N	
Tin and compounds	0	6.00E-01	H						2.20E+04	N	2.20E+03	N	8.10E+02	N	1.00E+06	N	4.70E+04	N	
**Titanium	7440326	4.00E+00	E	8.60E-03	E				1.50E+05	N	3.10E+01	N	5.40E+03	N	1.00E+06	N	3.10E+05	N	
**Titanium dioxide	13643677	4.00E+00	E	8.60E-03	E				1.50E+05	N	3.10E+01	N	5.40E+03	N	1.00E+06	N	3.10E+05	N	
Toluene	108883	2.00E-01	I	1.14E-01	I			x	7.50E+02	N	4.20E+02	N	2.70E+02	N	4.10E+05	N	1.60E+04	N	
Toluene-2,4-diamine	95807			3.20E+00	H				2.10E-02	C	2.00E-03	C	9.90E-04	C	1.80E+00	C	2.00E-01	C	
Toluene-2,5-diamine	95705	6.00E-01	H						2.20E+04	N	2.20E+03	N	8.10E+02	N	1.00E+06	N	4.70E+04	N	
Toluene-2,6-diamine	823405	2.00E-01	H						7.30E+03	N	7.30E+02	N	2.70E+02	N	4.10E+05	N	1.60E+04	N	
p-Toluidine	106490			1.90E-01	H				3.50E-01	C	3.30E-02	C	1.70E-02	C	3.00E+01	C	3.40E+00	C	
Toxaphene	8001352			1.10E+00	I	1.12E+00	I		6.10E-02	C	5.60E-03	C	2.90E-03	C	5.20E+00	C	5.80E-01	C	
Tralomethrin	66841256	7.50E-03	I						2.70E+02	N	2.70E+01	N	1.00E+01	N	1.50E+04	N	5.90E+02	N	
Triallate	2303175	1.30E-02	I						4.70E+02	N	4.70E+01	N	1.80E+01	N	2.70E+04	N	1.00E+03	N	
Triasulfuron	82097505	1.00E-02	I						3.70E+02	N	3.70E+01	N	1.40E+01	N	2.00E+04	N	7.80E+02	N	
1,2,4-Tribromobenzene	615543	5.00E-03	I					x	3.00E+01	N	1.80E+01	N	6.80E+00	N	1.00E+04	N	3.90E+02	N	
Tributyltin oxide (TBTO)	56359	3.00E-04	I						1.10E+01	N	1.10E+00	N	4.10E-01	N	6.10E+02	N	2.30E+01	N	
2,4,6-Trichloroaniline hydrochloride	33663502			2.90E-02	H				2.30E+00	C	2.20E-01	C	1.10E-01	C	2.00E+02	C	2.20E+01	C	
2,4,6-Trichloroaniline	634935			3.40E-02	H				2.00E+00	C	1.80E-01	C	9.30E-02	C	1.70E+02	C	1.90E+01	C	
1,2,4-Trichlorobenzene	120821	1.00E-02	I	5.71E-02	H			x	1.90E+02	N	2.10E+02	N	1.40E+01	N	2.00E+04	N	7.80E+02	N	
**1,1,1-Trichloroethane	71556	2.00E-02	E	2.86E-01	W			x	5.40E+02	N	1.00E+03	N	2.70E+01	N	4.10E+04	N	1.60E+03	N	
1,1,2-Trichloroethane	79005	4.00E-03	I	5.70E-02	I	5.60E-02	I	x	1.90E-01	C	1.10E-01	C	5.50E-02	C	1.00E+02	C	1.10E+01	C	
Trichloroethylene (TCE)	79016	6.00E-03	E	1.10E-02	W	6.00E-03	E	x	1.60E+00	C	1.00E+00	C	2.90E-01	C	5.20E+02	C	5.80E+01	C	



**Risk-Based Concentration Table**  
October 22, 1997

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Sources: I=IRIS H=HEAST A=HEAST alternate W=Withdrawn from IRIS or HEAST E=EPA-NCEA Regional Support provisional value O=Other EPA documents.										Basis: C=carcinogenic effects N=non-carcinogenic effects									
Contaminant	CAS	Risk-Based Concentrations										Soil Ingestion							
		RfDo mg/kg/d	RfDi mg/kg/d	CPSo kg-d/mg		CPSi kg-d/mg		V O C	Tap Water µg/L	Ambient Air µg/m3	Fish mg/kg	Industrial mg/kg	Residential mg/kg						
Trichlorofluoromethane	75694	3.00E-01	I	2.00E-01	A			x	1.30E+03	N	7.30E+02	N	4.10E+02	N	6.10E+05	N	2.30E+04	N	
2,4,5-Trichlorophenol	95954	1.00E-01	I						3.70E+03	N	3.70E+02	N	1.40E+02	N	2.00E+05	N	7.80E+03	N	
2,4,6-Trichlorophenol	88062					1.10E-02	I	1.09E-02	I	6.10E+00	C	5.70E-01	C	2.90E-01	C	5.20E+02	C	5.80E+01	C
2,4,5-Trichlorophenoxyacetic acid	93765	1.00E-02	I						3.70E+02	N	3.70E+01	N	1.40E+01	N	2.00E+04	N	7.80E+02	N	
2-(2,4,5-Trichlorophenoxy)propionic acid	93721	8.00E-03	I						2.90E+02	N	2.90E+01	N	1.10E+01	N	1.60E+04	N	6.30E+02	N	
1,1,2-Trichloropropane	598776	5.00E-03	I					x	3.00E+01	N	1.80E+01	N	6.80E+00	N	1.00E+04	N	3.90E+02	N	
1,2,3-Trichloropropane	96184	6.00E-03	I			7.00E+00	H	x	1.50E-03	C	8.90E-04	C	4.50E-04	C	8.20E-01	C	9.10E-02	C	
1,2,3-Trichloropropene	96195	5.00E-03	H					x	3.00E+01	N	1.80E+01	N	6.80E+00	N	1.00E+04	N	3.90E+02	N	
1,1,2-Trichloro-1,2,2- trifluoroethane	76131	3.00E+01	I	8.57E+00	H			x	5.90E+04	N	3.10E+04	N	4.10E+04	N	1.00E+06	N	1.00E+06	N	
Tridiphane	58138082	3.00E-03	I						1.10E+02	N	1.10E+01	N	4.10E+00	N	6.10E+03	N	2.30E+02	N	
Triethylamine	121448			2.00E-03	I				7.30E+01	N	7.30E+00	N	0.00E+00		0.00E+00		0.00E+00		
Trifluralin	1582098	7.50E-03	I			7.70E-03	I		8.70E+00	C	8.10E-01	C	4.10E-01	C	7.40E+02	C	8.30E+01	C	
**1,2,4-Trimethylbenzene	95636	5.00E-02	E	1.70E-03	E			x	1.20E+01	N	6.20E+00	N	6.80E+01	N	1.00E+05	N	3.90E+03	N	
**1,3,5-Trimethylbenzene	108678	5.00E-02	E	1.70E-03	E			x	1.20E+01	N	6.20E+00	N	6.80E+01	N	1.00E+05	N	3.90E+03	N	
Trimethyl phosphate	512561					3.70E-02	H		1.80E+00	C	1.70E-01	C	8.50E-02	C	1.50E+02	C	1.70E+01	C	
**1,3,5-Trinitrobenzene	99354	3.00E-02	E						1.10E+03	N	1.10E+02	N	4.10E+01	N	6.10E+04	N	2.30E+03	N	
Trinitrophenylmethylnitramine	479458	1.00E-02	H						3.70E+02	N	3.70E+01	N	1.40E+01	N	2.00E+04	N	7.80E+02	N	
2,4,6-Trinitrotoluene	118967	5.00E-04	I			3.00E-02	I		2.20E+00	C	2.10E-01	C	1.10E-01	C	1.90E+02	C	2.10E+01	C	
Uranium (soluble salts)	7440611	3.00E-03	I						1.10E+02	N	1.10E+01	N	4.10E+00	N	6.10E+03	N	2.30E+02	N	
Vanadium	7440622	7.00E-03	H						2.60E+02	N	2.60E+01	N	9.50E+00	N	1.40E+04	N	5.50E+02	N	
Vanadium pentoxide	1314621	9.00E-03	I						3.30E+02	N	3.30E+01	N	1.20E+01	N	1.80E+04	N	7.00E+02	N	
Vanadium sulfate	36907423	2.00E-02	H						7.30E+02	N	7.30E+01	N	2.70E+01	N	4.10E+04	N	1.60E+03	N	
Vernam	1929777	1.00E-03	I						3.70E+01	N	3.70E+00	N	1.40E+00	N	2.00E+03	N	7.80E+01	N	
Vinclozolin	50471448	2.50E-02	I						9.10E+02	N	9.10E+01	N	3.40E+01	N	5.10E+04	N	2.00E+03	N	
Vinyl acetate	108054	1.00E+00	H	5.71E-02	I				3.70E+04	N	2.10E+02	N	1.40E+03	N	1.00E+06	N	7.80E+04	N	
Vinyl bromide	593602			8.57E-04	I			x	5.20E+00	N	3.10E+00	N	0.00E+00		0.00E+00		0.00E+00		
Vinyl chloride	75014					1.90E+00	H	3.00E-01	H	x	1.90E-02	C	2.10E-02	C	1.70E-03	C	3.00E+00	C	
Warfarin	81812	3.00E-04	I						1.10E+01	N	1.10E+00	N	4.10E-01	N	6.10E+02	N	2.30E+01	N	
m-Xylene	108323	2.00E+00	H					x	1.20E+04	N	7.30E+03	N	2.70E+03	N	1.00E+06	N	1.60E+05	N	
o-Xylene	95476	2.00E+00	H					x	1.20E+04	N	7.30E+03	N	2.70E+03	N	1.00E+06	N	1.60E+05	N	
p-Xylene	106423							x	0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		
Xylene (mixed)	1330207	2.00E+00	I					x	1.20E+04	N	7.30E+03	N	2.70E+03	N	1.00E+06	N	1.60E+05	N	
Zinc	7440666	3.00E-01	I						1.10E+04	N	1.10E+03	N	4.10E+02	N	6.10E+05	N	2.30E+04	N	
Zinc phosphide	1314847	3.00E-04	I						1.10E+01	N	1.10E+00	N	4.10E-01	N	6.10E+02	N	2.30E+01	N	
Zineb	12122677	5.00E-02	I						1.80E+03	N	1.80E+02	N	6.80E+01	N	1.00E+05	N	3.90E+03	N	

**APPENDIX C**

**IDW SOIL SAMPLING LOGS**

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 1 of 8  
Site Location Gloss Industries, Birmingham, AL Location Name: NA  
Sample I.D. No. 970822 -LD-IW -SL 0021 Coded/Replicate No. 1  
Date 8/22 /97 Time of Sampling: Begin 1055 End \_\_\_\_\_  
Weather Sunny 80's  
Site Description At DeLeon Area  
1 Drum

### SAMPLING DATA

Collection Method Soil spoon STAINLESS STEEL SPOON  
Depth WT Moisture Content 16.57  
Color OLIVE GRAY (5Y312) Odor ORGANIC  
Description CLAY, ROCK

### Analyses Required

### Container Description

Priority Pollutant Metals & Barium (6010 & 7471)  
VOCs (8260)  
SVOCs (8270)  
Cyanide (9010)  
Sample Monitoring (TIP, OVA, HNU, etc.) \_\_\_\_\_

From Lab X or G&M \_\_\_\_\_  
1 x 4 oz  
1 x 8 oz  
1 x 8 oz  
1 x 8 oz

Remarks Non VOC's Composited in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 2 of 8  
Site Location Sloss Industries, Birmingham, AL Location Name: ~~MW-29~~ (13) 11/17/97  
Sample I.D. No. 9708 22 -LD- 1W -SLOO29 Coded/Replicate No. K+ 10/13/97  
Date 8/22/97 Time of Sampling: Begin 1640 End \_\_\_\_\_  
Weather SPRINK, 80's, NW WIND 5-mph  
Site Description AT DELON AREA

### SAMPLING DATA

Collection Method Split spoon  
Depth NA Moisture Content SATURATED  
Color LIGHT BROWN (5YR 5/6) & DISK BROWN (6YR 2/2) Odor \_\_\_\_\_  
Description CLAY, ROCK (LIMESTONE), & SAND (20/30 FINE SAND)

### Analyses Required

### Container Description

	From Lab	X	or G&M
<u>Priority Pollutant Metals &amp; Barium (6010 &amp; 7471)</u>	1	x 4 oz	
<u>VOCs (8260)</u>	1	x 8 oz	
<u>SVOCs (8270)</u>	1	x 8 oz	
<u>Cyanide (9010)</u>	1	x 8 oz	
<u>Sample Monitoring (TIP, OVA, HNU, etc.)</u>			

Remarks Non VOC's Compositated in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 3 of 8  
Site Location Gloss Industries, Birmingham, AL Location Name: NA  
Sample I.D. No. 970822 -LD- 1W -SLOD31 A, B, & C Coded/Replicate No. -  
Date 8/22/97 Time of Sampling: Begin 1545 End -  
Weather Sunny 80's, New Wind D-Smph  
Site Description AT DECON AREA

### SAMPLING DATA

Collection Method Split spoon  
Depth NA Moisture Content SATURATED  
Color MUD GRAY (N7) ASB, BLACK-C Odor -  
Description A LIMESTONE  
B FINE DUST  
C FINE DUST

### Analyses Required

Priority Pollutant Metals & Barium (6010 & 7471)  
VOCs (8260)  
SVOCs (8270)  
Cyanide (9010)  
Sample Monitoring (TIP, OVA, HNU, etc.) -

### Container Description

From Lab X or G&M -  
1 x 4 oz  
1 x 8 oz  
1 x 8 oz  
1 x 8 oz

Remarks Non VOC's Composited in stainless steel bowl with stainless steel spoon  
Sampler(s) J. Hughes

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 4 of 8  
Site Location Sloss Industries, Birmingham, AL Location Name: NA  
Sample I.D. No. 970822-LD-1W-SL0032 Coded/Replicate No. —  
Date 8/21/97 Time of Sampling: Begin 1625 End —  
Weather 70NNE NW wind 5 mph  
Site Description AT DECON AREA

### SAMPLING DATA

Collection Method Split spoon  
Depth NA Moisture Content dry  
Color Black Odor —  
Description FINE DUST

### Analyses Required

### Container Description

Priority Pollutant Metals & Barium (6010 & 7471)  
VOCs (8260)  
SVOCs (8270)  
Cyanide (9010)  
Sample Monitoring (TIP, OVA, HNU, etc.)

From Lab X or G&M —  
1 x 4 oz  
1 x 8 oz  
1 x 8 oz  
1 x 8 oz

Remarks Non VOC's Composited in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 5 of 5  
Site Location Gloss Industries, Birmingham, AL Location Name: LA  
Sample I.D. No. 9708 22 -LD-1W -SL0033 A B C Coded/Replicate No. —  
Date: 8/22/97 Time of Sampling: Begin 15.5 End —  
Weather Sunny, 80's, E wind 5 mph  
Site Description AT DECON AREA

### SAMPLING DATA

Collection Method Split spoon  
Depth — Moisture Content SATURATED  
Color BLACK i med GRAY - (N 7) - BRUM B Odor —  
Description A - FINE DUST  
B - LIMESTONE  
C - FINE DUST

### Analyses Required

### Container Description

	From Lab <u>X</u> or G&M <u>—</u>
<u>Priority Pollutant Metals &amp; Barium (6010 &amp; 7471)</u>	<u>1 x 4 oz</u>
<u>VOCs (8260)</u>	<u>1 x 8 oz</u>
<u>SVOCs (8270)</u>	<u>1 x 8 oz</u>
<u>Cyanide (9010)</u>	<u>1 x 8 oz</u>
<u>Sample Monitoring (TIP, OVA, HNU, etc.)</u>	<u>—</u>

Remarks Non VOC's Composited in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 61 of 8

Site Location Gloss Industries, Birmingham, AL Location Name: \_\_\_\_\_

Sample I.D. No. 970822-LD-1W-SL0035 A:B Coded/Replicate No. -

Date 8/22/97 Time of Sampling: Begin 11:5 End \_\_\_\_\_

Weather \_\_\_\_\_

Site Description ATTRECON AREA

A - Clay

B - Rock

### SAMPLING DATA

Collection Method Split spoon

Depth NA Moisture Content SATURATED

Color MED GRAY (NA) : DARK YELLOWSH BROWN (10 YR 4/2) Odor -

Description CLAY & ROCK

### Analyses Required

### Container Description

Priority Pollutant Metals & Barium (6010 & 7471)

From Lab X or G&M \_\_\_\_\_

1 x 4 oz

VOCs (8260)

1 x 8 oz

SVOCs (8270)

1 x 8 oz

Cyanide (9010)

1 x 8 oz

Sample Monitoring (TIP, OVA, HNU, etc.) \_\_\_\_\_

Remarks Non VOC's Compositated in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes



## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015

Page 7 of 8

Site Location Gloss Industries, Birmingham, AL

Location Name: NA

Sample I.D. No. 970822-LD-IW-SL0037

Coded/Replicate No. \_\_\_\_\_

Date 8/22/97

Time of Sampling: Begin 1445

End \_\_\_\_\_

Weather Sunny 80's Light wind E

Site Description AT DECON AREA

### SAMPLING DATA

Collection Method Split spoon

Depth NA

Moisture Content SATURATED

Color Light Gray (W7)

Odor -

Description LIMESTONE

### Analyses Required

### Container Description

Priority Pollutant Metals & Barium (6010 & 7471)

From Lab X or G&M \_\_\_\_\_

1 x 4 oz

VOCs (8260)

1 x 8 oz

SVOCs (8270)

1 x 8 oz

Cyanide (9010)

1 x 8 oz

Sample Monitoring (TIP, OVA, HNU, etc.) \_\_\_\_\_

Remarks Non VOC's Composited in stainless steel bowl with stainless steel spoon

Sampler(s) J. Hughes

## SOIL/SEDIMENT SAMPLING LOG

Project No. TF0320.015 Page 8 of 8

Site Location Gloss Industries, Birmingham, AL LOCATION: NA

Sample I.D. No. 970822-LD-1W-SL9999 A & B & C Coded/Replicate No. —

Date 8/22/97 Time of Sampling: Begin 1705 End —

Weather SUNNY 80's

Site Description AT DECON PAD

3 DRUMS

### SAMPLING DATA

Collection Method STAINLESS STEEL SPOON

Depth NA Moisture Content Moist

Color MOD BROWN (5YR 4/1a) & MOD YELLOWISH BROWN (10YR 2.5/4) Odor —

Description VISQUENE & SOIL

### Analyses Required

### Container Description

From Lab ✓ or G&M —

PRIORITY POLLUTANT METALS

VOLs (8260)

SVOLs (8270)

CYANIDE (9010)

1 x 802

1 x 402

1 x 802

1 x 802

Sample Monitoring (TIP, OVA, HNU, etc.) —

Remarks SAMPLES COLLECTED FROM AIR ONLY SINCE DRUM C HAD ONLY VISQUENE

W/ A SLIGHT SOIL COATING IN IT. NON VOL'S COMPOSITED IN STAINLESS STEEL BOWL w/  
STAINLESS STEEL SPOON

Sampler(s) J. HUGHES

I, JAMES GRASSIANO, am responsible for filing documents in the

(Name of file) SLOSS IND, B'HAM file. The attached document,

(Name of document) RFI LAND DISPOSAL AREAS, VOL II of III

was originally submitted to the Alabama Department of Environmental  
Management in a 3-ring binder.

For ease of filing, only the binder has changed. No material has changed in the  
document. No other alterations have been made to said document, and it is  
otherwise in its original form as submitted to the Alabama Department of  
Environmental Management.



Done this 9<sup>th</sup> of Feb, 1999.

Witness:



RCRA FACILITY INVESTIGATION  
LAND DISPOSAL AREAS  
VOLUME III OF III

ANALYTICAL DATA

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Sloss Industries, Inc.  
Birmingham, Alabama

MAR 1998  
RECEIVED  
LAND DIVISION



**ARCADIS**

GERAGHTY & MILLER

Address:  
14497 North Dale Mabry Hwy  
Suite 115  
Tampa, Florida 33618

**REPORT**

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January 1998

**VOLUME III**  
**SAMPLE DESIGNATION EXPLANATION**

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## SAMPLE DESIGNATION

A sample identification system has been developed to enable the field sampling personnel to establish unique and appropriate identifications for each sample collected. This system incorporates identifiers for the type of investigation, SWMU (when applicable), sample matrix, and the sample location. The identification number will consist of a date code, investigation code, SWMU code, sample matrix code, and sample number. Each of these codes is described below.

Date Code. The date code will consist of a six-digit number. The first two digits refer to the year, the second two digits refer to the month, and the last two digits refer to the day.

Investigation Code. The investigation code will consist of a two-character alpha code. The investigation codes for all samples collected throughout the five-year project are defined as follows.

Facility-Wide	FW
Coke Manufacturing	CO
Land Disposal Areas	LD
Chemical Manufacturing Plant	CM
Biological Treatment Facility	BT

SWMU Code. The SWMU code is a location code. This code will be a number, e.g., "21" for SWMU No. 21, "IW" for investigation-derived waste, or "00" for other samples without a specific location designation (i.e., for background samples) collected during the Facility-Wide Investigation.

Sample Matrix Code. This code includes field QC samples. The sample matrix code will be a two-character alpha code that describes the type of sample matrix. The following codes will be used:

Soil:	SL
Sediment:	SD
Surface Water:	SW
Groundwater (piezometer or monitor well):	GW
Ambient Air:	AA
Waste, Sludge, Landfills, Waste Piles:	SM
Field Blank (Water):	FB
Equipment Blank:	EB
Trip Blank:	TB
Process Water	PW

Sample Number Code. The sample number code will be a four-digit number starting with 0001, proceeding sequentially with 0002, 0003, through 0999. This allows for potentially 999 samples from any matrix at any SWMU.

Field Replicate (Duplicate) Samples. Field replicate samples will be uniquely identified with a "9" immediately following the matrix code. Specific notation of this number and the sample number of its mate shall be noted, with clarity, in the field logs. The Quality Assurance (QA) Officer shall be provided with these notes so that replicate analyses can be identified during data validation procedures.

Examples. The following numbers are provided as examples to illustrate how the sample coding will work for each matrix. Assume the field samples and the QC samples were collected during the Facility-Wide investigation and Coke Manufacturing Plant investigation on June 8-12, 1996.

Investigation-derived Soil Samples from Monitor Well 21:	970816-LD-IW-SL0021
Soil Samples from one interval at SWMU 24 location 1:	970617-LD-24-SL0001(0-1')
Sludge Sample from Location 1 at SWMU 23:	970617-LD-23-SM0001
Groundwater Sample from SWMU 38 at Monitor Well 27:	970819-LD-38-GW0027
Field Replicate of Soil from one interval at SWUM 24 Location 1:	970617-LD-24-SL9001
Field Blank associated with Soil Sampling at SWMU 24:	970617-LD-24-FB0001
Field Blank associated with groundwater sampling at SWMU 38:	970819-LD-38-FB0002
Equipment Blank associated with soil sampling at SWMU 39:	970812-LD-39-SLEB02
Trip Blank associated with SWMU 23:	970617-LD-23-TB0001

Note that the equipment blank identifier has the type of equipment designated before the "EB" designation. This is to allow for database sorting of samples by matrix and associated equipment blanks.

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**VOLUME III**  
**SURFICIAL SOIL AND SLUDGE**

0004



# SLOSS INDUSTRIES

## DATA VALIDATION CHECKLIST

PROJECT NAME  
PROJECT NUMBER  
SAMPLE  
IDENTIFICATION(S)

Sloss Industries			
TF320.015			
970616-LD-39-FB0001	970617-LD-24-FB0001	970618-LD-24-SL0009	
970616-LD-39-EB0001	970617-LD-24-SL9001	970618-LD-24-SL0010	
970616-LD-39-SM9001	970618-LD-24-SL0002	970618-LD-24-SL0011	
970616-LD-39-SM0001 (a)	970617-LD-24-SL0003	970618-LD-24-SL0012	
970616-LD-39-SM0002	970617-LD-24-SL0004	970618-LD-24-SL0013	
970616-LD-39-SM0003	970617-LD-24-SL0005	970618-LD-24-SL0014	
970616-LD-39-SM0004 (a)	970617-LD-24-SL0006 (b)	970618-LD-24-SL0015	
970616-LD-39-TB0001	970617-LD-24-SL0007	970618-LD-24-SL0016	
970617-LD-24-EB0001	970618-LD-24-SL0008		
(a) Sample held		(b) Additional sample collected for MS/MSD	
June 16 through 18, 1997			
Joe Hughes and David Page			
Soil, Sludge/Waste			
Analytical Services, Inc.			
Cyanide (9010), PPT Metals, 8260, 8270, and TCLP 8260, 8270, 8080, 8150			
Geraghty & Miller, Inc./Level II			
84221			
September 11 and 12, 1997			

SAMPLE DATE (S)  
SAMPLE TEAM  
SAMPLE MATRIX  
ANALYZING LABORATORY  
ANALYSES REQUESTED  
QA REPORTING LEVEL  
LABORATORY REPORT NO.  
VALIDATION DATE

## FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: *	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Sampling dates noted		X		X	
2. Sampling team indicated		X		X	
3. Sampling identification traceable to location collected		X		X	
4. Sample location		X		X	
5. Sample depth for soils		X		X	
6. Collection technique (bailer, pump, etc.)		X		X	
7. Field sample preparation techniques		X		X	
8. Sample type (grab, composite)		X		X	
9. Sample container type		X		X	
10. Preservation methods		X		X	
11. Chain-of-custody form completed		X		X	
12. Required analytical methods requested		X		X	
13. Field (water and soil) sample logs completed properly and signed		X		X	
14. Number and type of field QC samples collected (blanks, replicates, splits, etc.)		X		X	
15. Field equipment calibration	X				X
16. Field equipment decontamination		X		X	
17. Sample shipping		X		X	
18. Laboratory task order		X		X	

\* Field sampling logs = water and/or soil/sediment sampling logs

### FIELD DATA PACKAGE DOCUMENTATION

COMMENTS: Field Duplicate Pairs 970616-LD-39-SM0003 and 970616-LD-39-SM9001  
970617-LD-24-SL0006 and 970617-LD-24-SL9001

All field duplicate and split sample results were reviewed.

MS/MSD 970617-LD-24-SL0006

Split with Guardian: 970617-LD-24-SL0005 Split samples will be reviewed under separate cover.  
970618-LD-24-SL0011

### ANALYTICAL DATA PACKAGE DOCUMENTATION GENERAL INFORMATION

ALL QA REPORTING LEVELS:	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Method of analysis		X		X	
4. Detection limits of analysis		X		X	
5. Master tracking list		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preparation/extraction date		X		X	
9. Sample analysis date		X		X	
10. Copy of chain-of-custody form signed by lab sample custodian		X		X	
11. Narrative summary of QA or sample problems provided		X		X	

QA - quality assurance

COMMENTS : No qualification was necessary.  
All analytical data were reported as Geraghty & Miller Level II data deliverables

**INORGANIC ANALYSES  
TOTAL METALS METHODS**

QA REPORTING LEVEL II REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Holding times		X		X	
2. Detection limits		X		X	
3. Calibration curve standards	X				X
4. Initial calibration verification %R	X				X
5. Continuing calibration verification %R	X				X
6. Blanks					
A. Preparation and calibration blanks		X		X	
B. Equipment rinsate blanks		X		X	
C. Field blanks		X		X	
7. Interference check sample %R (ICP only)	X				X
8. Dilution check sample %R (ICP only)	X				X
9. Laboratory control sample %R		X		X	
10. Matrix spike %R		X		X	
11. Lab duplicate or MSD %R and RPD	X				X
12. LCS duplicate %R and RPD		X		X	
13. Post-digestion analytical spike (FAA only)		X		X	
14. Field duplicate comparison		X		X	
15. Total and dissolved metals comparison	X				X

%R - percent recovery

RPD - relative percent difference

MSD - matrix spike duplicate

ICP - inductively coupled plasma atomic emission spectroscopy

FAA - furnace atomic absorption

NA - not applicable or not analyzed

**COMMENTS:**

This section was completed for Priority Pollutant Metals. Performance was acceptable, with the following exceptions and notes. All qualified analytical results are summarized in the attached table.

970616-LD-39-SM9001 - MS/MSD out of control limit, qualified Sb (12 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified As (7.6 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated

970616-LD-39-SM0002 - MS/MSD out of control limit, qualified Sb (12 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified As (7.6 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated

970616-LD-39-SM0003 - MS/MSD & PDS out of control limit, qualified As (7.0 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified Zn (2900mg/kg) J/Estimated

970617-LD-24-SL9001 - MS/MSD out of the upper control limit, qualified Sb (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified As (7.3 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated

970618-LD-24-SL0002 - MS/MSD out of the upper control limit, qualified Sb (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified As (5.5 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated

970618-LD-24-SL0003 - MS/MSD out of the upper control limit, qualified Sb (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified As (9.1 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated

970618-LD-24-SL0004 - MS/MSD out of the upper control limit, qualified Sb (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified As (9.9 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated

**INORGANIC ANALYSES  
TOTAL METALS METHODS**

COMMENTS Continued;

970617-LD-24-SL0005 - MS/MSD out of the upper control limit, qualified Sb (13 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified As (12.8 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated

970617-LD-24-SL0006 - MS/MSD out of the upper control limit, qualified Sb (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified As (8.1 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated

970617-LD-24-SL0007 - MS/MSD out of the upper control limit, qualified Sb (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified As (21 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated

970618-LD-24-SL0008 - MS/MSD out of the upper control limit, qualified Sb (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified As (9.0 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated

970618-LD-24-SL0009 - MS/MSD out of the upper control limit, qualified Sb (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified As (9.1 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated

970618-LD-24-SL0010 - MS/MSD out of the upper control limit, qualified Sb (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified As (16.4 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated

970618-LD-24-SL0011 - MS/MSD out of the upper control limit, qualified Sb (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified As (9.9 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated

970618-LD-24-SL0012 - MS/MSD out of the upper control limit, qualified Sb (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified As (13.5 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated

970618-LD-24-SL0013 - MS/MSD out of the upper control limit, qualified Sb (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified As (7.1 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated

970618-LD-24-SL0014 - MS/MSD out of the upper control limit, qualified Sb (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified As (19mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated

970618-LD-24-SL0015 - MS/MSD out of the upper control limit, qualified Sb (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified As (7.7mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated

970618-LD-24-SL0016 - MS/MSD out of the upper control limit, qualified Sb (7.4) J/Estimated  
MS/MSD & PDS out of control limit, qualified As (13.7mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated

**INORGANIC ANALYSES  
WET CHEMISTRY METHODS**

QA REPORTING LEVEL III REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Holding times		X		X	
2. Detection limits		X		X	
3. Calibration curve standards	X				X
4. Initial calibration verification %R	X				X
5. Continuing calibration verification %R	X				X
6. Blanks					
A. Preparation and calibration blanks		X		X	
B. Equipment rinsate blanks		X		X	
C. Field blanks		X		X	
7. Laboratory control sample %R		X		X	
8. Matrix spike %R		X		X	
9. Lab duplicate or MSD %R and RPD		X		X	
10. LCS duplicate %R and RPD		X		X	
11. Field duplicate comparison	X				X

%R - percent recovery

RPD - relative percent difference

MSD - matrix spike duplicate

LCS - laboratory control sample duplicate

NA - not applicable or not analyzed

**COMMENTS:**

This section was completed for cyanide data. Performance was acceptable, with the following exceptions and notes.

Cyanide

970616-LD-39-SM9001 - MS/MSD out of the upper control limit, qualified detected value as J/Estimated  
 970616-LD-39-SM0002 - MS/MSD out of the upper control limit, qualified detected value as J/Estimated  
 970616-LD-39-SM0003 - MS/MSD out of the upper control limit, qualified detected value as J/Estimated  
 970617-LD-24-SL9001 - MS/MSD out of the upper control limit, qualified detected value as J/Estimated  
 970617-LD-24-SL0003 - MS/MSD out of the upper control limit, qualified detected value as J/Estimated  
 970617-LD-24-SL0005 - MS/MSD out of the upper control limit, qualified detected value as J/Estimated  
 970617-LD-24-SL0006 - MS/MSD out of the upper control limit, qualified detected value as J/Estimated  
 970617-LD-24-SL0007 - MS/MSD out of the upper control limit, qualified detected value as J/Estimated  
 970618-LD-24-SL0008 - MS/MSD out of the upper control limit, qualified detected value as J/Estimated  
 970618-LD-24-SL0009 - MS/MSD out of the upper control limit, qualified detected value as J/Estimated  
 970618-LD-24-SL0010 - MS/MSD out of the upper control limit, qualified detected value as J/Estimated

# ORGANIC ANALYSES

QA REPORTING LEVEL II REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	

## GAS CHROMATOGRAPHY (GC) OR HIGH PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC)

### 1. Holding times

A. Extraction holding time

B. Analysis holding time

### 2. Detection limits

### 3. Blanks

A. Water blanks (VOCs)

B. Extraction blanks

C. Equipment rinsate blanks

D. Field Blanks

E. Trip blanks

### 4. Initial calibration verification %R

### 5. Continuing calibration verification %R

### 6. Matrix spike %R

### 7. Matrix spike duplicate %R

### 8. Sample specific lab duplicate (optional)

### 9. MS/MSD or lab duplicate precision (RPD)

### 10. Reagent water spike (BS)

### 11. Reagent water spike duplicate (BSD)

### 12. BS/BSD precision (RPD)

### 13. Surrogate spike recoveries

### 14. Sample chromatograms

### 15. Field duplicate comparison

	X		X	
	X		X	
	X		X	
X				X
	X		X	
	X		X	
	X		X	
	X		X	
X				X
X				X
	X		X	
	X		X	
	X		X	
	X		X	
	X		X	
X				X
	X		X	

VOCs - volatile organic compounds

%R - percent recovery

RPD - relative percent difference

MS - matrix spike

MSD - matrix spike duplicate

NA - not analyzed or not applicable

BS - blank spike

BSD - blank spike duplicate

### COMMENTS:

This section was completed for TCLP Herbicides Method 8150. Performance was acceptable. No sample qualification was necessary.

**ORGANIC ANALYSES  
VOLATILE ORGANIC COMPOUNDS**

QA REPORTING LEVEL II REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
<b>GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)</b>					
1. Holding times		X		X	
2. Detection limits		X		X	
3. Blanks					
A. Water blanks (VOCs)		X		X	
B. Equipment rinsate blanks		X		X	
C. Field Blanks		X		X	
D. Trip blanks		X		X	
4. Instrument tune and performance check	X				X
5. Initial calibration RRFs and %RSDs	X				X
6. Continuing calibration RRFs and %Ds	X				X
7. Matrix spike (MS) %R		X		X	
8. Matrix spike duplicate (MSD) %R		X		X	
9. Sample specific lab duplicate (optional)	X				X
10. MS/MSD or lab duplicate precision (RPD)		X		X	
11. Reagent water spike (BS)		X		X	
12. Reagent water spike duplicate (BSD)		X		X	
13. BS/BSD precision (RPD)		X		X	
14. Laboratory control sample (optional)		X		X	
15. Surrogate spike recoveries		X		X <sup>(1)</sup>	
16. Internal standard retention times and areas	X				X
17. Compound identification and quantitation					
A. Reconstructed ion chromatograms	X				X
B. Quantitation reports	X				X
18. TIC search (optional)	X				X
19. Field duplicate comparison	X				X

VOCs - volatile organic compounds

RRF - relative response factor

% RSD - percent relative standard deviation

%D - percent drift

%R - percent recovery

RPD - relative percent difference

BS - blank spike

BSD - blank spike duplicate

TIC - tentatively identified compound

**COMMENTS:**

This section was completed for volatiles Method 8260 and TCLP volatiles Method 8260. Performance was acceptable, with the following exceptions and notes.

- The following samples were qualified based on surrogate recovery criteria

Volatiles by 8260 (Not TCLP)

970616-LD-39-SM9001 - All analytical results were <BDL, qualified as UJ/Non-detected Estimated

970616-LD-39-SM0002 - All analytical results were <BDL, qualified as UJ/Non-detected Estimated

970616-LD-39-SM0003 - All analytical results were <BDL, qualified as UJ/Non-detected Estimated

**ORGANIC ANALYSES  
SEMIVOLATILE ORGANIC COMPOUNDS**

QA REPORTING LEVEL II REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
1. Holding times					
A. Extraction holding time		X		X	
B. Analysis holding time		X		X	
2. Detection limits		X		X	
3. Blanks					
A. Water blanks		X		X	
B. Extraction blanks		X		X	
C. Equipment rinsate blanks		X		X	
D. Field Blanks		X		X	
4. Instrument tune and performance check	X				X
5. Initial calibration RRFs and %RSDs	X				X
6. Continuing calibration RRFs and %Ds	X				X
7. Matrix spike (MS) %R		X		X	
8. Matrix spike duplicate (MSD) %R		X		X	
9. Sample specific lab duplicate (optional)	X				X
10. MS/MSD or lab duplicate precision (RPD)		X		X	
11. Laboratory control sample (LCS)		X		X	
12. LCS duplicate (LCSD)		X		X	
13. LCS/LCSD precision (RPD)		X		X	
14. Surrogate spike recoveries		X		X <sup>(1)</sup>	
15. Internal standard retention times and areas	X				X
16. Compound identification and quantitation					
A. Reconstructed ion chromatograms	X				X
B. Quantitation reports	X				X
17. TIC search (optional)	X				X
18. Field duplicate comparison	X				X

SVOCs - semivolatile organic compounds  
RRF - relative response factor  
% RSD - percent relative standard deviation

%D - percent drift  
%R - percent recovery  
RPD - relative percent difference

TIC - tentatively identified compound

**COMMENTS:**

This section was completed for semivolatile Method 8270 and semivolatiles TCLP Method 8270. Performance was acceptable, with the following exceptions and notes.

1. The following samples were qualified based on surrogate recovery criteria

TCLP Base Neutral Acids by Method 8270

970616-LD-39-SM0002 - ACID FRACTION ONLY/phenolic compounds - Qualify all analytical results <BDL as R/Rejected

970616-LD-39-SM0003 - ACID FRACTION ONLY/phenolic compounds - Qualify all analytical results <BDL as R/Rejected

Phenolic Compounds to be qualified: Total Cresol, Pentachlorophenol, 2,4,5-Trichlorophenol, and 2,4,6-Trichlorophenol



**ORGANIC ANALYSES**  
**PESTICIDES AND POLYCHLORINATED BIPHENYL COMPOUNDS**

QA REPORTING LEVEL II REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	

**GAS CHROMATOGRAPHY/ELECTRON CAPTURE DETECTOR (GC/ECD)**

1. Holding times

A. Extraction holding time

B. Analysis holding time

2. Detection limits

3. Blanks

A. Extraction blanks

B. Instrument blanks

C. Equipment rinsate blanks

D. Field Blanks

4. GC/ECD instrument performance check

5. 4,4'-DDT/Endrin breakdown

6. Initial calibration %RSD

A. Retention time window calculation

B. Peak resolution

6. Continuing calibration verification %D

7. Matrix spike (MS) %R

8. Matrix spike duplicate (MSD) %R

9. Sample specific lab duplicate (optional)

10. MS/MSD or lab duplicate precision (RPD)

11. Reagent water spike (BS)

12. Reagent water spike duplicate (BSD)

13. BS/BSD precision (RPD)

14. Surrogate spike recoveries

15. Pesticide cleanup checks

16. Compound identification and quantitation

A. Reconstructed ion chromatograms

B. Quantitation reports

17. Second column (GC/MS) confirmation

18. Field duplicate comparison

	X		X	
	X		X	
	X		X	
	X		X	
X				X
X				X
X				X
X				X
X				X
X				X
X				X
	X		X	
	X		X	
X				X
	X		X	
	X		X	
	X		X	
	X		X	
X				X
X				X
X				X
X				X

% RSD - percent relative standard deviation

%D - percent difference

%R - percent recovery

RPD - relative percent difference

BS - blank spike

BSD - blank spike duplicate

**COMMENTS:**

This section was completed for TCLP Chlorinated Pesticides Method 8080. Performance was acceptable. No sample qualification was necessary.

A summary of qualified analytical results associated with this data set are presented in the attached table.

VALIDATION PERFORMED BY: Cynthia Arnold

SIGNATURE: Cynthia Arnold

DATE: 10/15/97

**Summary of Qualified Analytical Results  
for Soils, Sludges, and Waste  
ASI Data Package 84221  
Sloss Industries, Birmingham, AL**

G & M Sample LD.	Analyte	Concentration Detected	Qualifier	Reasons for Qualification
<i>ASI Laboratory Report No 84221</i>				
* 970616-LD-39-SM9001	Antimony	12 mg/Kg	J	MS/MSD out of control limit criteria
	Arsenic	7.6 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Cyanide	4.8 mg/Kg	J	MS/MSD out of control limit criteria
	Volatiles/8260	All <BDL	UJ	Surrogate spike recoveries were out of control limit criteri
970616-LD-39-SM0002	Antimony	12 mg/Kg	J	MS/MSD out of control limit criteria
	Arsenic	7.6 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Cyanide	3.2 mg/Kg	J	MS/MSD out of control limit criteria
	Volatiles/8260	All <BDL	UJ	Surrogate spike recoveries were out of control limit criteri
* 970616-LD-39-SM0003	TCLP BNA/8270	All Phenol compds <sup>(1)</sup>	R	Surrogate spike recoveries were out of control limit criteri
	Arsenic	7.0 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Zinc	2900 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Cyanide	4.7 mg/Kg	J	MS/MSD out of control limit criteria
* 970617-LD-24-SL9001	Volatiles/8260	All <BDL	UJ	Surrogate spike recoveries were out of control limit criteri
	TCLP BNA/8270	All Phenol compds <sup>(1)</sup>	R	Surrogate spike recoveries were out of control limit criteri
	Antimony	BDL	UJ	MS/MSD out of control limit criteria
	Arsenic	7.3 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970618-LD-24-SL0002	Cyanide	0.7 mg/Kg	J	MS/MSD out of control limit criteria
	Antimony	BDL	UJ	MS/MSD out of control limit criteria
	Arsenic	5.5 mg/Kg	J	MS/MSD and PDS out of control limit criteria
970617-LD-24-SL0003	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Antimony	BDL	UJ	MS/MSD out of control limit criteria
	Arsenic	9.1 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970617-LD-24-SL0004	Cyanide	1.3 mg/Kg	J	MS/MSD out of control limit criteria
	Antimony	BDL	UJ	MS/MSD out of control limit criteria
	Arsenic	9.9 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria

0014

**Summary of Qual. Analytical Results  
for Soils, Sludges, and Waste  
ASI Data Package 84221  
Sloss Industries, Birmingham, AL**

2 of 3

G & M Sample I.D.	Analyte	Concentration Detected	Qualifier	Reasons for Qualification
<i>ASI Laboratory Report No 84221</i>				
970617-LD-24-SL0005	Antimony	13 mg/Kg	J	MS/MSD out of control limit criteria
	Arsenic	12.8 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Cyanide	4.1 mg/Kg	J	MS/MSD out of control limit criteria
* 970617-LD-24-SL0006	Antimony	BDL	UJ	MS/MSD out of control limit criteria
	Arsenic	8.1 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Cyanide	0.9 mg/Kg	J	MS/MSD out of control limit criteria
970617-LD-24-SL0007	Antimony	BDL	UJ	MS/MSD out of control limit criteria
	Arsenic	21 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Cyanide	2.8 mg/Kg	J	MS/MSD out of control limit criteria
970618-LD-24-SL0008	Antimony	BDL	UJ	MS/MSD out of control limit criteria
	Arsenic	9.0 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Cyanide	0.8 mg/Kg	J	MS/MSD out of control limit criteria
970618-LD-24-SL0009	Antimony	BDL	UJ	MS/MSD out of control limit criteria
	Arsenic	9.1 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Cyanide	0.8 mg/Kg	J	MS/MSD out of control limit criteria
970618-LD-24-SL0010	Antimony	BDL	UJ	MS/MSD out of control limit criteria
	Arsenic	16.4 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Cyanide	1.7 mg/Kg	J	MS/MSD out of control limit criteria
970618-LD-24-SL0011	Antimony	BDL	UJ	MS/MSD out of control limit criteria
	Arsenic	9.9 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970618-LD-24-SL0012	Antimony	BDL	UJ	MS/MSD out of control limit criteria
	Arsenic	13.5 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria

10/15/97

0015

**Summary of Qualified Analytical Results  
for Soils, Sludges, and Waste  
ASI Data Package 84221  
Sloss Industries, Birmingham, AL**

G & M Sample I.D.	Analyte	Concentration Detected	Qualifier	Reasons for Qualification
<i>ASI Laboratory Report No 84221</i> 970618-LD-24-SL0013	Antimony	BDL	UJ	MS/MSD out of control limit criteria
	Arsenic	7.1 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970618-LD-24-SL0014	Antimony	BDL	UJ	MS/MSD out of control limit criteria
	Arsenic	19 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970618-LD-24-SL0015	Antimony	BDL	UJ	MS/MSD out of control limit criteria
	Arsenic	7.7 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970618-LD-24-SL0016	Antimony	7.4 mg/Kg	J	MS/MSD out of control limit criteria
	Arsenic	13.7 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria

Notes:

U - Non-detect

UJ - Non-detected estimated

J - Estimated

R - Rejected

\* Field Duplicate pair

(1) TCLP BNA/8270 Phenolic Compound List

Total Cresol	2,4,5- Trichlorophenol
Pentachlorophenol	2,4,6- Trichlorophenol



# ANALYTICAL SERVICES, INC.

ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

## ***Master List*** **ASI #84221**

<b>Sample #</b>	<b>G&amp;M ID</b>	<b>Analysis</b>
84221-1	970616-LD-39-FB0001	9010, Metals, 8260, 8270
84221-2	970616-LD-39-EB0001	9010, Metals, 8260, 8270
84221-3	970616-LD-39-SM9001	9010, Metals, 8260, 8270
84221-4	970616-LD-39-SM0001	<i>Hold per client request</i>
84221-5	970616-LD-39-SM0002	9010, Metals, 8260, 8270, TCLP
84221-6	970616-LD-39-SM0003	9010, Metals, 8260, 8270, TCLP
84221-7	970616-LD-39-SM0004	<i>Hold per client request</i>
84221-8	970616-LD-39-TB0001	8260
84221-9	970617-LD-24-EB0001	9010, Metals, 8260, 8270
84221-10	970617-LD-24-FB0001	9010, Metals, 8260, 8270
84221-11	970617-LD-24-SL9001	9010, Metals, 8260, 8270
84221-12	970618-LD-24-SL0002	9010, Metals, 8260, 8270
84221-13	970617-LD-24-SL0003	9010, Metals, 8260, 8270
84221-14	970617-LD-24-SL0004	9010, Metals, 8260, 8270
84221-15	970617-LD-24-SL0005	9010, Metals, 8260, 8270
84221-16	970617-LD-24-SL0006	9010, Metals, 8260, 8270
84221-17	970617-LD-24-SL0006MS	9010, Metals, 8260, 8270
84221-18	970617-LD-24-SL0006MSD	9010, Metals, 8260, 8270
84221-19	970617-LD-24-SL0007	9010, Metals, 8260, 8270
84221-20	970618-LD-24-SL0008	9010, Metals, 8260, 8270
84221-21	970618-LD-24-SL0009	9010, Metals, 8260, 8270
84221-22	970618-LD-24-SL0010	9010, Metals, 8260, 8270
84221-23	970618-LD-24-SL0011	9010, Metals, 8260, 8270
84221-24	970618-LD-24-SL0012	9010, Metals, 8260, 8270
84221-25	970618-LD-24-SL0013	9010, Metals, 8260, 8270
84221-26	970618-LD-24-SL0014	9010, Metals, 8260, 8270
84221-27	970618-LD-24-SL0015	9010, Metals, 8260, 8270
84221-28	970618-LD-24-SL0016	9010, Metals, 8260, 8270

0017

8 July, 1997

## Case Narrative Report 84221

The samples were collected on 16-18 June, 1997 and received by ASI 18 June, 1997. Conditions for proper sample receipt were met as indicated on the Chain of Custody. The samples were logged into the LIMS as report 84221 for the following analyses as per client request: Aqueous samples - BNA (EPA 8270), VOA (EPA 8260), Metals (EPA 6010, 7470, 7841, 7740, 7060), and CN (EPA 9010); Solid samples - BNA (EPA 8270), VOA (EPA 8260), Metals (EPA 6010, 7471, 7841, 7740, 7060), CN (EPA 9010), Moisture (ASTM D 2216), and TCLP BNA, VOA, PEST, HERB, Metals. All holding times for sample preparation and analysis were met.

BNA analysis (EPA 8270) for aqueous samples gave acceptable spike and surrogate recoveries with the exception that 84221-1 gave a low recovery for 2-Fluorophenol. Re-extraction and reanalysis of 84221-1 gave acceptable recoveries for all surrogates.

VOA analysis (EPA 8260) for aqueous samples met all data quality objectives.

Metals analysis (EPA 6010) for aqueous samples gave acceptable recoveries for all quality controls with the single exception that Zn had a low PDS recovery. Hg analysis (EPA 7470) met all data quality objectives. Tl analysis (EPA 7841) met all data quality objectives. Se analysis (EPA 7740) gave acceptable recoveries for LCS/LCSD/PDS, but had low MS/MSD recoveries. As analysis (EPA 7060) gave low MS/MSD/PDS, but acceptable LCS/LCSD recoveries.

CN analysis (EPA 9010) for aqueous samples gave high recoveries for MS/MSD. LCS/LCSD recoveries and Duplicate RPD were acceptable.

BNA analysis (EPA 8270) for solid samples gave acceptable spike and surrogate recoveries with exception that 84221-26 gave a high recovery for 2,4,6-Tribromophenol. Dilution and reanalysis of 84221-26 gave a high recovery for 2-Fluorobiphenyl.

VOA analysis (EPA 8260) for solid samples was split into two batches. Batch #30978 gave acceptable spike and surrogate recoveries with the following exceptions: samples 84221-3 and 84221-5 gave high recoveries for Toluene-d8 and low recoveries for 4-Bromofluorobenzene initially and when reanalyzed as duplicates; 84221-6 gave a low recovery for 1,2-Dichloroethane-d4 and high recoveries for Toluene-d8 and Ethylbenzene-d10; 84221-12, 84221-14, and 84221-23 gave low recoveries for 4-Bromofluorobenzene; 84221-15 and 84221-27 gave high recoveries for Toluene-d8 and low recoveries for 4-Bromofluorobenzene; 84221-19 gave unacceptable recoveries for all surrogates. Sample 84221-6 was reanalyzed in batch #31017 and gave a high recovery for Toluene-d8 and a low recovery for 4-Bromofluorobenzene. Samples 84221-12,

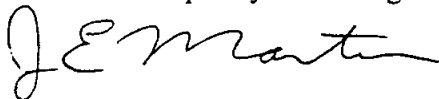
84221-14, 84221-15, 84221-19, 84221-23, and 84221-27 were reanalyzed in batch #31017 with acceptable surrogate recoveries. Batch #31017 gave acceptable recoveries for LCS/LCSD with high MS RPD on 1,1-Dichloroethene and Toluene, high MS/MSD on Toluene, and high MSD on Benzene.

Metals analysis (EPA 6010) for solid samples was split into two batches. Batch #30528 gave acceptable recoveries for all quality controls with the following exceptions: MS/MSD were low for Sb, MS RPD was high for Cr and Zn, PDS was high for Cr. Batch #30529 gave acceptable recoveries for all quality controls with the single exception that MS/MSD/PDS for Zn were low. Hg analysis (EPA 7471) met all quality objectives for both batches. Tl analysis (EPA 7841) gave low MS/MSD/PDS and acceptable LCS/LCSD for both batches. Se analysis (EPA 7740) met all data quality objectives for both batches. As analysis (EPA 7060) gave low recoveries for MS/MSD on batch #30511 and low recoveries on MS/MSD/PDS on batch #30512, but acceptable LCS/LCSD for both batches.

CN analysis (EPA 9010) for solid samples was split into three batches. All batches gave acceptable recoveries for LCS/LCSD and Duplicate RPD. Batch #31061 and batch #31062 gave high recoveries for MS/MSD. Batch #31065 gave acceptable recoveries for MS/MSD.

Moisture analysis (ASTM D 2216) met all data quality objectives.

TCLP analysis for BNA gave low MS/MSD recoveries for Cresol and 2,4,6-Trichlorophenol and low MS for 2,4,5-Trichlorophenol with acceptable recoveries for LCS/LCSD. Samples 84221-5, 84221-6, and the MS/MSD samples were re-extracted to confirm matrix effect on the surrogates. TCLP analysis for VOA gave a low LCS recovery on 1,2-Dichloroethane, and high MS/MSD on Chloroform, 1,2-Dichloroethane, and MEK due to the TCLP matrix. All VOA surrogate recoveries were acceptable with exception that the MS/MSD sample gave high recoveries on 1,2-Dichloroethane-d4. TCLP analysis for PEST met all data quality objectives. TCLP analysis for HERB gave acceptable spike and surrogate recoveries with exception that 84221-5 gave a low recovery for DCAA and was re-extracted. TCLP analysis for Metals was split into two batches. Batch #30526 for ICP showed a high blank value for Ba, low MS for Cd, and low MS/MSD/PDS for Pb. Batch #30922 for Hg gave a low recovery for MSD. All other Metals quality controls gave acceptable recoveries.



for

Roy-Keith Smith, PhD  
Quality Assurance Manager



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

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## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-1

July 24, 1997

### Sample Description

Sloss Industries

Water, G & M Project #TF0320.015, 970616-LD-39-FB0001, 06/16/97, 15:30, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	4.2	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	BDL	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0030



## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970616-LD-39-FB0001, 06/16/97, 15:30, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
145	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
7184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
1027	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
10865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

0011

## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970616-LD-39-FB0001, 06/16/97, 15:30, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

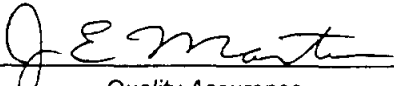
**Sample Description**

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970616-LD-39-FB0001, 06/16/97, 15:30, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin  
Report No.: 84221-2

July 24, 1997

### Sample Description

Sloss Industries

Water, G & M Project #TF0320.015, 970616-LD-39-EB0001, 06/16/97, 15:45, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	BDL	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970616-LD-39-EB0001, 06/16/97, 15:45, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
10425	Styrene	BDL	5	ug/l	1	EPA 8260A
10045	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
107755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
107027	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970616-LD-39-EB0001, 06/16/97, 15:45, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 827C
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 827C
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

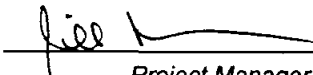
**Sample Description**

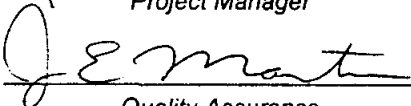
Sloss Industries

Water, G &amp; M Project #TF0320.015, 970616-LD-39-EB0001, 06/16/97, 15:45, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway Norcross, GA 30092  
(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin  
Report No.: 84221-3

July 24, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970616-LD-39-SM9001, 06/16/97,, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	10.8	0.05	%	1	
57125	Total Cyanide	4.8	0.2	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	12	5.6	mg/kg	1	EPA 6010A
7440382	Total Arsenic	7.6	1.1	mg/kg	1	EPA 7060A
7440393	Total Barium	220	1.1	mg/kg	1	EPA 6010A
7440417	Total Beryllium	2.3	0.56	mg/kg	1	EPA 6010A
7440439	Total Cadmium	12	0.56	mg/kg	1	EPA 6010A
7440473	Total Chromium	BDL	1.1	mg/kg	1	EPA 6010A
7440508	Total Copper	120	2.2	mg/kg	1	EPA 6010A
7439921	Total Lead	220	2.8	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.28	mg/kg	1	EPA 7471
7440020	Total Nickel	20	2.2	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.5	mg/kg	1	EPA 7740
7440224	Total Silver	3.0	1.1	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.5	mg/kg	1	EPA 7841
7440666	Total Zinc	2800	2.2	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	56	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	56	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	56	ug/kg	1	EPA 8260A
71432	Benzene	BDL	6	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	11	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	11	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	11	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0028

Page 1 of 1



## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970616-LD-39-SM9001, 06/16/97,, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	11	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	56	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	56	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	56	ug/kg	1	EPA 8260A
425	Styrene	BDL	6	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	11	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	11	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	370	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	370	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	370	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	370	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	370	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	1900	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	1900	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	370	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	370	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	370	ug/kg	1	EPA 8270B
35	2-Nitrophenol	BDL	370	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	1900	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	370	ug/kg	1	EPA 8270B
108952	Phenol	BDL	370	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970616-LD-39-SM9001, 06/16/97,, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	370	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	370	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	1900	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	370	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	370	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	370	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	370	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	370	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	370	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	370	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	370	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	370	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	370	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	370	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	370	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	370	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	370	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	370	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	370	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	370	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	370	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	370	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	370	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	370	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	370	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	370	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	370	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	1900	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	370	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	370	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	370	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	370	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	370	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	370	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	370	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	370	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	370	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	370	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	370	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	370	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	370	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	370	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	370	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	370	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	370	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0030

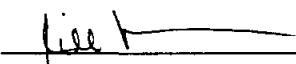
## Sample Description

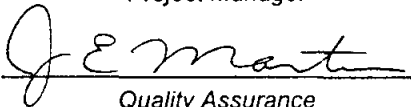
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970616-LD-39-SM9001, 06/16/97,, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	370	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	370	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	370	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	370	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	370	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	370	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	370	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	370	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway Norcross, GA 30092  
(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin  
Report No.: 84221-4

July 24, 1997

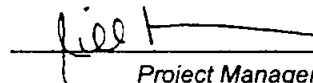
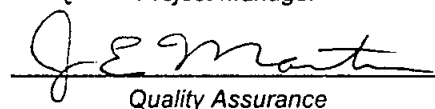
### Sample Description

Sloss Industries  
Soil, G & M Project #TF0320.015, 970616-LD-39-SM0001, 06/16/97, 16:20, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
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Hold until further notice.

Respectfully submitted,

  
Project Manager  
  
Quality Assurance



# ANALYTICAL SERVICES, INC.

## Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

### Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-5

July 24, 1997

#### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970616-LD-39-SM0002, 06/16/97, 18:25, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
	Moisture	16.9	0.04	%		1	
57125	Total Cyanide	3.2	0.2	mg/kg		1	EPA 9010A
Priority Pollutant Metals							
Metals							
7440360	Total Antimony	12	6.0	mg/kg		1	EPA 6010A
7440382	Total Arsenic	7.6	1.2	mg/kg		1	EPA 7060A
7440393	Total Barium	260	1.2	mg/kg		1	EPA 6010A
7440417	Total Beryllium	1.6	0.6	mg/kg		1	EPA 6010A
7440439	Total Cadmium	11	0.6	mg/kg		1	EPA 6010A
7440473	Total Chromium	BDL	1.2	mg/kg		1	EPA 6010A
7440508	Total Copper	160	2.4	mg/kg		1	EPA 6010A
7439921	Total Lead	320	3.0	mg/kg		1	EPA 6010A
7439976	Total Mercury	BDL	0.30	mg/kg		1	EPA 7471
7440020	Total Nickel	25	2.4	mg/kg		1	EPA 6010A
7782492	Total Selenium	BDL	4.8	mg/kg		1	EPA 7740
7440224	Total Silver	4.6	1.2	mg/kg		1	EPA 6010A
7440280	Total Thallium	BDL	4.8	mg/kg		1	EPA 7841
7440666	Total Zinc	3100	2.4	mg/kg		1	EPA 6010A
Volatile Organics (EPA 8260A)							
67641	Acetone	BDL	68	ug/kg		1	EPA 8260A
107028	Acrolein	BDL	68	ug/kg		1	EPA 8260A
107131	Acrylonitrile	BDL	68	ug/kg		1	EPA 8260A
71432	Benzene	BDL	7	ug/kg		1	EPA 8260A
75274	Bromodichloromethane	BDL	7	ug/kg		1	EPA 8260A
75252	Bromoform	BDL	7	ug/kg		1	EPA 8260A
74839	Bromomethane	BDL	14	ug/kg		1	EPA 8260A
75150	Carbon disulfide	BDL	7	ug/kg		1	EPA 8260A
56235	Carbon tetrachloride	BDL	7	ug/kg		1	EPA 8260A
108907	Chlorobenzene	BDL	7	ug/kg		1	EPA 8260A
75133	Chloroethane	BDL	7	ug/kg		1	EPA 8260A
67663	Chloroform	BDL	7	ug/kg		1	EPA 8260A
74873	Chloromethane	BDL	14	ug/kg		1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	14	ug/kg		1	EPA 8260A

BDL - Below Detection Limits

0033

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970616-LD-39-SM0002, 06/16/97, 18:25, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	7	ug/kg		1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg		1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg		1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	14	ug/kg		1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg		1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg		1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg		1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg		1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg		1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg		1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg		1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg		1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg		1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg		1	EPA 8260A
591786	2-Hexanone	BDL	68	ug/kg		1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg		1	EPA 8260A
78933	2-Butanone	BDL	68	ug/kg		1	EPA 8260A
75092	Methylene chloride	BDL	7	ug/kg		1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	68	ug/kg		1	EPA 8260A
100425	Styrene	BDL	7	ug/kg		1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg		1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg		1	EPA 8260A
108883	Toluene	BDL	7	ug/kg		1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg		1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg		1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg		1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg		1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg		1	EPA 8260A
108054	Vinyl acetate	BDL	14	ug/kg		1	EPA 8260A
75014	Vinyl chloride	BDL	14	ug/kg		1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg		1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>							
59507	4-Chloro-3-methylphenol	BDL	400	ug/kg		1	EPA 8270B
95578	2-Chlorophenol	BDL	400	ug/kg		1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	400	ug/kg		1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	400	ug/kg		1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	400	ug/kg		1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2000	ug/kg		1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2000	ug/kg		1	EPA 8270B
95487	2-Methylphenol	BDL	400	ug/kg		1	EPA 8270B
108394	3-Methylphenol	BDL	400	ug/kg		1	EPA 8270B
106445	4-Methylphenol	BDL	400	ug/kg		1	EPA 8270B
88755	2-Nitrophenol	BDL	400	ug/kg		1	EPA 8270B
100027	4-Nitrophenol	BDL	2000	ug/kg		1	EPA 8270B
87865	Pentachlorophenol	BDL	400	ug/kg		1	EPA 8270B
108952	Phenol	BDL	400	ug/kg		1	EPA 8270B

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

0034

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970616-LD-39-SM0002, 06/16/97, 18:25, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	400	ug/kg		1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	400	ug/kg		1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2000	ug/kg		1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>							
83329	Acenaphthene	BDL	400	ug/kg		1	EPA 8270B
208968	Acenaphthylene	BDL	400	ug/kg		1	EPA 8270B
120127	Anthracene	BDL	400	ug/kg		1	EPA 8270B
56553	Benzo(a)anthracene	BDL	400	ug/kg		1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	400	ug/kg		1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	400	ug/kg		1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	400	ug/kg		1	EPA 8270B
50328	Benzo(a)pyrene	BDL	400	ug/kg		1	EPA 8270B
100516	Benzyl Alcohol	BDL	400	ug/kg		1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	400	ug/kg		1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	400	ug/kg		1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	400	ug/kg		1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	400	ug/kg		1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	400	ug/kg		1	EPA 8270B
106478	p-Chloroaniline	BDL	400	ug/kg		1	EPA 8270B
106478	2-Chloronaphthalene	BDL	400	ug/kg		1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	400	ug/kg		1	EPA 8270B
218019	Chrysene	BDL	400	ug/kg		1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	400	ug/kg		1	EPA 8270B
132649	Dibenzofuran	BDL	400	ug/kg		1	EPA 8270B
84742	Di-n-butylphthalate	BDL	400	ug/kg		1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	400	ug/kg		1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	400	ug/kg		1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	400	ug/kg		1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2000	ug/kg		1	EPA 8270B
84662	Diethylphthalate	BDL	400	ug/kg		1	EPA 8270B
131113	Dimethylphthalate	BDL	400	ug/kg		1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	400	ug/kg		1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	400	ug/kg		1	EPA 8270B
117840	Di-n-octylphthalate	BDL	400	ug/kg		1	EPA 8270B
206440	Fluoranthene	BDL	400	ug/kg		1	EPA 8270B
86737	Fluorene	BDL	400	ug/kg		1	EPA 8270B
118741	Hexachlorobenzene	BDL	400	ug/kg		1	EPA 8270B
87683	Hexachlorobutadiene	BDL	400	ug/kg		1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	400	ug/kg		1	EPA 8270B
67721	Hexachloroethane	BDL	400	ug/kg		1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	400	ug/kg		1	EPA 8270B
78591	Isophorone	BDL	400	ug/kg		1	EPA 8270B
106476	2-Methylnaphthalene	BDL	400	ug/kg		1	EPA 8270B
91203	Naphthalene	BDL	400	ug/kg		1	EPA 8270B
88744	2-Nitroaniline	BDL	400	ug/kg		1	EPA 8270B
99092	3-Nitroaniline	BDL	400	ug/kg		1	EPA 8270B

BDL - Below Detection Limits

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970616-LD-39-SM0002, 06/16/97, 18:25, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	400	ug/kg		1	EPA 8270B
98953	Nitrobenzene	BDL	400	ug/kg		1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	400	ug/kg		1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	400	ug/kg		1	EPA 8270B
85018	Phenanthrene	BDL	400	ug/kg		1	EPA 8270B
129000	Pyrene	BDL	400	ug/kg		1	EPA 8270B
110861	Pyridine	BDL	400	ug/kg		1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	400	ug/kg		1	EPA 8270B
<b>Toxicity Characteristic Leaching Procedure (EPA 1311)</b>							
7440382	D004 Arsenic	BDL	3.0	mg/l	5.0	1	EPA 1311
7440393	D005 Barium	2.8	0.36	mg/l	100.0	1	EPA 1311
7440439	D006 Cadmium	0.036	0.012	mg/l	1.0	1	EPA 1311
5103719	D020 alpha-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
5564347	D020 gamma-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
7440473	D007 Chromium	BDL	0.012	mg/l	5.0	1	EPA 1311
	D026 Total Cresol	BDL	0.05	mg/l	200.0	1	EPA 1311
94757	D016 2,4-D	BDL	0.05	mg/l	10.0	1	EPA 1311
106467	D027 1,4-Dichlorobenzene	BDL	0.05	mg/l	7.5	1	EPA 1311
121142	D030 2,4-Dinitrotoluene	BDL	0.05	mg/l	0.13	1	EPA 1311
72208	D012 Endrin	BDL	0.001	mg/l	0.02	1	EPA 1311
76448	D031 Heptachlor	BDL	0.001	mg/l	0.008	1	EPA 1311
1024573	D031 Heptachlor epoxide	BDL	0.001	mg/l	0.008	1	EPA 1311
118741	D032 Hexachlorobenzene	BDL	0.05	mg/l	0.13	1	EPA 1311
87683	D033 Hexachlorobutadiene	BDL	0.05	mg/l	0.5	1	EPA 1311
67721	D034 Hexachloroethane	BDL	0.05	mg/l	3.0	1	EPA 1311
7439921	D008 Lead	BDL	0.12	mg/l	5.0	1	EPA 1311
58899	D013 Lindane	BDL	0.01	mg/l	0.4	1	EPA 1311
7439976	D009 Mercury	BDL	0.006	mg/l	0.2	1	EPA 1311
72435	D014 Methoxychlor	BDL	0.50	mg/l	10.0	1	EPA 1311
98953	D036 Nitrobenzene	BDL	0.05	mg/l	2.0	1	EPA 1311
87865	D037 Pentachlorophenol	BDL	0.05	mg/l	100.0	1	EPA 1311
7782492	D010 Selenium	BDL	0.60	mg/l	1.0	1	EPA 1311
7440224	D011 Silver	BDL	0.012	mg/l	5.0	1	EPA 1311
8001352	D015 Toxaphene	BDL	0.05	mg/l	0.5	1	EPA 1311
95954	D041 2,4,5-Trichlorophenol	BDL	0.05	mg/l	400.0	1	EPA 1311
88062	D042 2,4,6-Trichlorophenol	BDL	0.05	mg/l	2.0	1	EPA 1311
93721	D017 2,4,5-TP Silvex	BDL	0.1	mg/l	1.0	1	EPA 1311
110861	D038 Pyridine	BDL	0.05	mg/l	5.0	1	EPA 1311
<b>Zero Headspace Extraction (ZHE)</b>							
71432	D018 Benzene	BDL	0.02	mg/l	0.5	1	EPA 1311
56235	D019 Carbon tetrachloride	BDL	0.02	mg/l	0.5	1	EPA 1311
108907	D021 Chlorobenzene	BDL	0.02	mg/l	100.0	1	EPA 1311
67663	D022 Chloroform	BDL	0.02	mg/l	6.0	1	EPA 1311
107062	D028 1,2-Dichloroethane	BDL	0.02	mg/l	0.5	1	EPA 1311
75354	D029 1,1-Dichloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
78933	D035 Methyl ethyl ketone	BDL	0.5	mg/l	200.0	1	EPA 1311

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

0036



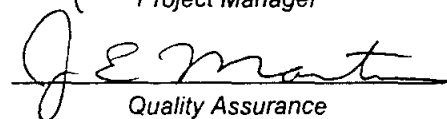
**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970616-LD-39-SM0002, 06/16/97, 18:25, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
127184	D039 Tetrachloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
79016	D040 Trichloroethene	BDL	0.02	mg/l	0.5	1	EPA 1311
75014	D043 Vinyl chloride	BDL	0.02	mg/l	0.2	1	EPA 1311

Respectfully submitted,

  
Project Manager  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway Norcross, GA 30092  
(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin  
Report No.: 84221-6

July 24, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970616-LD-39-SM0003, 06/16/97, 17:00, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
	Moisture	11.8	0.04	%		1	
57125	Total Cyanide	4.7	0.2	mg/kg		1	EPA 9010A
Priority Pollutant Metals							
Metals							
7440360	Total Antimony	13	5.7	mg/kg		1	EPA 6010A
7440382	Total Arsenic	7.0	1.1	mg/kg		1	EPA 7060A
7440393	Total Barium	230	1.1	mg/kg		1	EPA 601
7440417	Total Beryllium	2.1	0.6	mg/kg		1	EPA 6010A
7440439	Total Cadmium	8.3	0.6	mg/kg		1	EPA 6010A
7440473	Total Chromium	BDL	1.1	mg/kg		1	EPA 6010A
7440508	Total Copper	110	2.3	mg/kg		1	EPA 6010A
7439921	Total Lead	220	2.8	mg/kg		1	EPA 6010A
7439976	Total Mercury	BDL	0.28	mg/kg		1	EPA 7471
7440020	Total Nickel	20	2.3	mg/kg		1	EPA 6010A
7782492	Total Selenium	BDL	4.5	mg/kg		1	EPA 7740
7440224	Total Silver	3.4	1.1	mg/kg		1	EPA 6010A
7440280	Total Thallium	BDL	4.5	mg/kg		1	EPA 7841
7440666	Total Zinc	2900	2.3	mg/kg		1	EPA 6010A
Volatile Organics (EPA 8260A)							
67641	Acetone	BDL	57	ug/kg		1	EPA 8260A
107028	Acrolein	BDL	57	ug/kg		1	EPA 8260A
107131	Acrylonitrile	BDL	57	ug/kg		1	EPA 8260A
71432	Benzene	BDL	6	ug/kg		1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg		1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg		1	EPA 8260A
74839	Bromomethane	BDL	11	ug/kg		1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg		1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg		1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg		1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg		1	EPA 826
67663	Chloroform	BDL	6	ug/kg		1	EPA 8260A
74873	Chloromethane	BDL	11	ug/kg		1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	11	ug/kg		1	EPA 8260A

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

0038

Page 1 of 5

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970616-LD-39-SM0003, 06/16/97, 17:00, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg		1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg		1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg		1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	11	ug/kg		1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg		1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg		1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg		1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg		1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg		1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg		1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg		1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg		1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg		1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg		1	EPA 8260A
591786	2-Hexanone	BDL	57	ug/kg		1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg		1	EPA 8260A
78933	2-Butanone	BDL	57	ug/kg		1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg		1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	57	ug/kg		1	EPA 8260A
425	Styrene	BDL	6	ug/kg		1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg		1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg		1	EPA 8260A
108883	Toluene	BDL	6	ug/kg		1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg		1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg		1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg		1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg		1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg		1	EPA 8260A
108054	Vinyl acetate	BDL	11	ug/kg		1	EPA 8260A
75014	Vinyl chloride	BDL	11	ug/kg		1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg		1	EPA 8260A
Acid Extractable Organics (EPA 8270B)							
59507	4-Chloro-3-methylphenol	BDL	380	ug/kg		1	EPA 8270B
95578	2-Chlorophenol	BDL	380	ug/kg		1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	380	ug/kg		1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	380	ug/kg		1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	380	ug/kg		1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	1900	ug/kg		1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	1900	ug/kg		1	EPA 8270B
95487	2-Methylphenol	BDL	380	ug/kg		1	EPA 8270B
108394	3-Methylphenol	BDL	380	ug/kg		1	EPA 8270B
106445	4-Methylphenol	BDL	380	ug/kg		1	EPA 8270B
55	2-Nitrophenol	BDL	380	ug/kg		1	EPA 8270B
100027	4-Nitrophenol	BDL	1900	ug/kg		1	EPA 8270B
87865	Pentachlorophenol	BDL	380	ug/kg		1	EPA 8270B
108952	Phenol	BDL	380	ug/kg		1	EPA 8270B

BDL - Below Detection Limits

0039

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970616-LD-39-SM0003, 06/16/97, 17:00, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	380	ug/kg		1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	380	ug/kg		1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	1900	ug/kg		1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>							
83329	Acenaphthene	BDL	380	ug/kg		1	EPA 8270B
208968	Acenaphthylene	BDL	380	ug/kg		1	EPA 8270B
120127	Anthracene	BDL	380	ug/kg		1	EPA 8270B
56553	Benzo(a)anthracene	BDL	380	ug/kg		1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	380	ug/kg		1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	380	ug/kg		1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	380	ug/kg		1	EPA 8270B
50328	Benzo(a)pyrene	BDL	380	ug/kg		1	EPA 8270B
100516	Benzyl Alcohol	BDL	380	ug/kg		1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	380	ug/kg		1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	380	ug/kg		1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	380	ug/kg		1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	380	ug/kg		1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	380	ug/kg		1	EPA 8270B
106478	p-Chloroaniline	BDL	380	ug/kg		1	EPA 8270B
91587	2-Chloronaphthalene	BDL	380	ug/kg		1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	380	ug/kg		1	EPA 8270B
218019	Chrysene	BDL	380	ug/kg		1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	380	ug/kg		1	EPA 8270B
132649	Dibenzofuran	BDL	380	ug/kg		1	EPA 8270B
84742	Di-n-butylphthalate	BDL	380	ug/kg		1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	380	ug/kg		1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	380	ug/kg		1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	380	ug/kg		1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	1900	ug/kg		1	EPA 8270B
84662	Diethylphthalate	BDL	380	ug/kg		1	EPA 8270B
131113	Dimethylphthalate	BDL	380	ug/kg		1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	380	ug/kg		1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	380	ug/kg		1	EPA 8270B
117840	Di-n-octylphthalate	BDL	380	ug/kg		1	EPA 8270B
206440	Fluoranthene	BDL	380	ug/kg		1	EPA 8270B
86737	Fluorene	BDL	380	ug/kg		1	EPA 8270B
118741	Hexachlorobenzene	BDL	380	ug/kg		1	EPA 8270B
87683	Hexachlorobutadiene	BDL	380	ug/kg		1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	380	ug/kg		1	EPA 8270B
67721	Hexachloroethane	BDL	380	ug/kg		1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	380	ug/kg		1	EPA 8270B
78591	Isophorone	BDL	380	ug/kg		1	EPA 8270B
91576	2-Methylnaphthalene	BDL	380	ug/kg		1	EPA 8270B
91203	Naphthalene	BDL	380	ug/kg		1	EPA 8270B
88744	2-Nitroaniline	BDL	380	ug/kg		1	EPA 8270B
99092	3-Nitroaniline	BDL	380	ug/kg		1	EPA 8270B

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

0040

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970616-LD-39-SM0003, 06/16/97, 17:00, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	380	ug/kg		1	EPA 8270B
98953	Nitrobenzene	BDL	380	ug/kg		1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	380	ug/kg		1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	380	ug/kg		1	EPA 8270B
85018	Phenanthrene	BDL	380	ug/kg		1	EPA 8270B
129000	Pyrene	BDL	380	ug/kg		1	EPA 8270B
110861	Pyridine	BDL	380	ug/kg		1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	380	ug/kg		1	EPA 8270B
<b>Toxicity Characteristic Leaching Procedure (EPA 1311)</b>							
7440382	D004 Arsenic	BDL	2.8	mg/l	5.0	1	EPA 1311
7440393	D005 Barium	0.91	0.34	mg/l	100.0	1	EPA 1311
7440439	D006 Cadmium	BDL	0.023	mg/l	1.0	1	EPA 1311
5103719	D020 alpha-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
5564347	D020 gamma-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
7440473	D007 Chromium	BDL	0.011	mg/l	5.0	1	EPA 1311
	D026 Total Cresol	BDL	0.05	mg/l	200.0	1	EPA 1311
94757	D016 2,4-D	BDL	0.05	mg/l	10.0	1	EPA 1311
106467	D027 1,4-Dichlorobenzene	BDL	0.05	mg/l	7.5	1	EPA 1311
11142	D030 2,4-Dinitrotoluene	BDL	0.05	mg/l	0.13	1	EPA 1311
108	D012 Endrin	BDL	0.001	mg/l	0.02	1	EPA 1311
76448	D031 Heptachlor	BDL	0.001	mg/l	0.008	1	EPA 1311
1024573	D031 Heptachlor epoxide	BDL	0.001	mg/l	0.008	1	EPA 1311
118741	D032 Hexachlorobenzene	BDL	0.05	mg/l	0.13	1	EPA 1311
87683	D033 Hexachlorobutadiene	BDL	0.05	mg/l	0.5	1	EPA 1311
67721	D034 Hexachloroethane	BDL	0.05	mg/l	3.0	1	EPA 1311
7439921	D008 Lead	BDL	0.11	mg/l	5.0	1	EPA 1311
58899	D013 Lindane	BDL	0.01	mg/l	0.4	1	EPA 1311
7439976	D009 Mercury	BDL	0.0057	mg/l	0.2	1	EPA 1311
72435	D014 Methoxychlor	BDL	0.5	mg/l	10.0	1	EPA 1311
98953	D036 Nitrobenzene	BDL	0.05	mg/l	2.0	1	EPA 1311
87865	D037 Pentachlorophenol	BDL	0.05	mg/l	100.0	1	EPA 1311
7782492	D010 Selenium	BDL	0.57	mg/l	1.0	1	EPA 1311
7440224	D011 Silver	BDL	0.011	mg/l	5.0	1	EPA 1311
8001352	D015 Toxaphene	BDL	0.05	mg/l	0.5	1	EPA 1311
95954	D041 2,4,5-Trichlorophenol	BDL	0.05	mg/l	400.0	1	EPA 1311
88062	D042 2,4,6-Trichlorophenol	BDL	0.05	mg/l	2.0	1	EPA 1311
93721	D017 2,4,5-TP Silvex	BDL	0.1	mg/l	1.0	1	EPA 1311
110861	D038 Pyridine	BDL	0.05	mg/l	5.0	1	EPA 1311
<b>Zero Headspace Extraction (ZHE)</b>							
71432	D018 Benzene	BDL	0.02	mg/l	0.5	1	EPA 1311
56235	D019 Carbon tetrachloride	BDL	0.02	mg/l	0.5	1	EPA 1311
118907	D021 Chlorobenzene	BDL	0.02	mg/l	100.0	1	EPA 1311
1063	D022 Chloroform	BDL	0.02	mg/l	6.0	1	EPA 1311
107062	D028 1,2-Dichloroethane	BDL	0.02	mg/l	0.5	1	EPA 1311
75354	D029 1,1-Dichloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
78933	D035 Methyl ethyl ketone	BDL	0.5	mg/l	200.0	1	EPA 1311

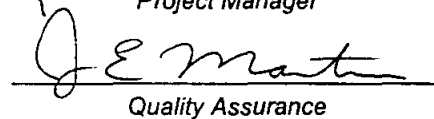
## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970616-LD-39-SM0003, 06/16/97, 17:00, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
127184	D039 Tetrachloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
79016	D040 Trichloroethene	BDL	0.02	mg/l	0.5	1	EPA 1311
75014	D043 Vinyl chloride	BDL	0.02	mg/l	0.2	1	EPA 1311

Respectfully submitted,

  
Project Manager  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-7

July 24, 1997

### Sample Description


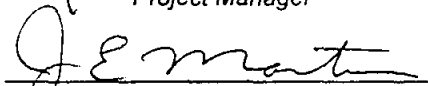
Sloss Industries

Soil, G & M Project #TF0320.015, 970616-LD-39-SM0004, 06/16/97, 18:00, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
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Hold until further notice.

Respectfully submitted,

  
Project Manager  
  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-8

July 24, 1997

### Sample Description

Sloss Industries

Water, G & M Project #TF0320.015, 970616-LD-39-TB0001,,, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0014



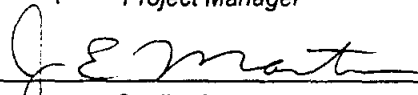
**Sample Description**

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970616-LD-39-TB0001,,, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A

Respectfully submitted,

  
Project Manager  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-9

July 24, 1997

### Sample Description

Sloss Industries

Water, G & M Project #TF0320.015, 970617-LD-24-EB0001, 06/17/97, 11:20, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	BDL	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7471
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0016

**Sample Description**

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970617-LD-24-EB0001, 06/17/97, 11:20, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
45	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
1027	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970617-LD-24-EB0001, 06/17/97, 11:20, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

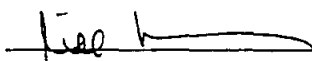
## Sample Description

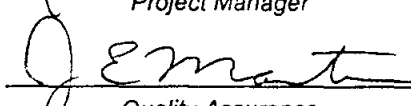
Sloss Industries

Water, G &amp; M Project #TF0320.015, 970617-LD-24-EB0001, 06/17/97, 11:20, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin  
Report No.: 84221-10

July 24, 1997

### Sample Description

Sloss Industries

Water, G & M Project #TF0320.015, 970617-LD-24-FB0001, 06/17/97, 11:10, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
<b>Priority Pollutant Metals</b>						
<b>Metals</b>						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	BDL	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 601C
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7471
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
<b>Volatile Organics (EPA 8260A)</b>						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 826C
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0050

## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970617-LD-24-FB0001, 06/17/97, 11:10, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
345	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
7184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
9027	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

0051

**Sample Description**

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970617-LD-24-FB0001, 06/17/97, 11:10, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B



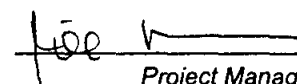
**Sample Description**

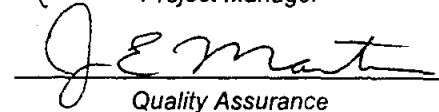
Sloss Industries

Water, G &amp; M Project #TF0320.015, 970617-LD-24-FB0001, 06/17/97, 11:10, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-11

July 24, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970617-LD-24-SL9001, 06/17/97,, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	17.7	0.04	%	1	
57125	Total Cyanide	0.7	0.2	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.1	mg/kg	1	EPA 6010A
7440382	Total Arsenic	7.5	1.2	mg/kg	1	EPA 7060A
7440393	Total Barium	36	1.2	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.61	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.61	mg/kg	1	EPA 6010A
7440473	Total Chromium	18	1.2	mg/kg	1	EPA 6010A
7440508	Total Copper	4.4	2.4	mg/kg	1	EPA 6010A
7439921	Total Lead	19	3.0	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.30	mg/kg	1	EPA 7471
7440020	Total Nickel	5.0	2.4	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.9	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.2	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.9	mg/kg	1	EPA 7841
7440666	Total Zinc	97	2.4	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	61	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	61	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	61	ug/kg	1	EPA 8260A
71432	Benzene	BDL	6	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	12	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	12	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	12	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0054

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970617-LD-24-SL9001, 06/17/97,, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	12	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	61	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	61	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
100101	4-Methyl-2-pentanone	BDL	61	ug/kg	1	EPA 8260A
100025	Styrene	BDL	6	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	12	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	12	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	400	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	400	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	400	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	400	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	400	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2100	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2100	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
105445	4-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
105445	2-Nitrophenol	BDL	400	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2100	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	400	ug/kg	1	EPA 8270B
108952	Phenol	BDL	400	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970617-LD-24-SL9001, 06/17/97,, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	400	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	400	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2100	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	400	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	400	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	400	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	400	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	400	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	400	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	400	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	400	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	400	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	400	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	400	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	400	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	400	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	400	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	400	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	400	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	400	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	400	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	400	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	400	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	400	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2100	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	400	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	400	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	400	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	400	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	400	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	400	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	400	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	400	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	400	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	400	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	400	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	400	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	400	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	400	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	400	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0055

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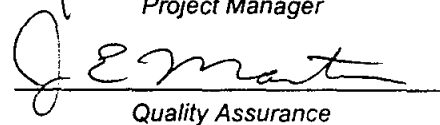
**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970617-LD-24-SL9001, 06/17/97,, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	400	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	400	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	400	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	400	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	400	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	400	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	400	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-12

July 24, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970618-LD-24-SL0002, 06/18/97, 16:00, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	29.0	0.04	%	1	
57125	Total Cyanide	BDL	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	7.0	mg/kg	1	EPA 6010A
7440382	Total Arsenic	5.5	1.4	mg/kg	1	EPA 7060A
7440393	Total Barium	34	1.4	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.7	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.7	mg/kg	1	EPA 6010A
7440473	Total Chromium	20	1.4	mg/kg	1	EPA 6010A
7440508	Total Copper	14	2.8	mg/kg	1	EPA 6010A
7439921	Total Lead	BDL	3.5	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.35	mg/kg	1	EPA 7471
7440020	Total Nickel	6.3	2.8	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	5.6	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.4	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	5.6	mg/kg	1	EPA 7841
7440666	Total Zinc	25	2.8	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	70	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	70	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	70	ug/kg	1	EPA 8260A
71432	Benzene	BDL	7	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	7	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	7	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	14	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	7	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	7	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	7	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	7	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	7	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	14	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	14	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0053

Page 1 of 1

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0002, 06/18/97, 16:00, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	7	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	14	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	70	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	70	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	7	ug/kg	1	EPA 8260A
1009101	4-Methyl-2-pentanone	BDL	70	ug/kg	1	EPA 8260A
425	Styrene	BDL	7	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg	1	EPA 8260A
108883	Toluene	BDL	7	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	14	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	14	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	460	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	460	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	460	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	460	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	460	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2400	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2400	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	460	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	460	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	460	ug/kg	1	EPA 8270B
55	2-Nitrophenol	BDL	460	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2400	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	460	ug/kg	1	EPA 8270B
108952	Phenol	BDL	460	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0002, 06/18/97, 16:00, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	460	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	460	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2400	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	460	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	460	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	460	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	460	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	460	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	460	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	460	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	460	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	460	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	460	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	460	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	460	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	460	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	460	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	460	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	460	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	460	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	460	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	460	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	460	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	460	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	460	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	460	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	460	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2400	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	460	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	460	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	460	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	460	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	460	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	460	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	460	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	460	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	460	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	460	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	460	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	460	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	460	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	460	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	460	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	460	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	460	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0060



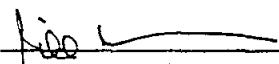
**Sample Description**

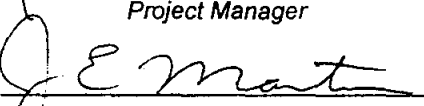
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0002, 06/18/97, 16:00, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	460	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	460	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	460	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	460	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	460	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	460	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	460	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	460	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-13

July 24, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970617-LD-24-SL0003, 06/17/97, 12:10, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	13.3	0.01	%	1	
57125	Total Cyanide	1.3	0.2	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	5.8	mg/kg	1	EPA 6010A
7440382	Total Arsenic	9.1	1.2	mg/kg	1	EPA 7060A
7440393	Total Barium	43	1.2	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.58	mg/kg	1	EPA 6010A
7440439	Total Cadmium	0.83	0.58	mg/kg	1	EPA 6010A
7440473	Total Chromium	11	1.2	mg/kg	1	EPA 6010A
7440508	Total Copper	13	2.3	mg/kg	1	EPA 6010A
7439921	Total Lead	20	2.9	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.29	mg/kg	1	EPA 7471
7440020	Total Nickel	5.9	2.3	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.6	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.2	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.6	mg/kg	1	EPA 7841
7440666	Total Zinc	84	2.3	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	57	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	57	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	57	ug/kg	1	EPA 8260A
71432	Benzene	BDL	6	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	11	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	11	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	11	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0062

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970617-LD-24-SL0003, 06/17/97, 12:10, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	11	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	57	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	57	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	57	ug/kg	1	EPA 8260A
1425	Styrene	BDL	6	ug/kg	1	EPA 8260A
19345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	11	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	11	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	380	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	380	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	380	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	380	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	380	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2000	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2000	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	380	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	380	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	380	ug/kg	1	EPA 8270B
755	2-Nitrophenol	BDL	380	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2000	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	380	ug/kg	1	EPA 8270B
108952	Phenol	BDL	380	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0063

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970617-LD-24-SL0003, 06/17/97, 12:10, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	380	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	380	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2000	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	380	ug/kg	1	EPA 8270B
208968	Acenaphthylene	580	380	ug/kg	1	EPA 8270B
120127	Anthracene	410	380	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	2050	380	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	1500	380	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	980	380	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	1500	380	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	1400	380	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	380	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	380	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	380	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	380	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	380	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	380	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	380	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	380	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	380	ug/kg	1	EPA 8270B
218019	Chrysene	1400	380	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	380	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	380	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	380	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	380	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	380	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	380	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2000	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	380	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	380	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	380	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	380	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	380	ug/kg	1	EPA 8270B
206440	Fluoranthene	2200	380	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	380	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	380	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	380	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	380	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	380	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	1300	380	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	380	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	380	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	380	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	380	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	380	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0064

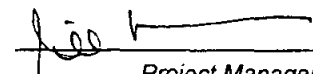
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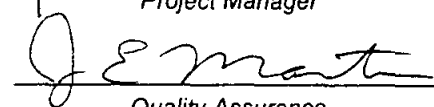
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970617-LD-24-SL0003, 06/17/97, 12:10, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	380	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	380	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	380	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	380	ug/kg	1	EPA 8270B
85018	Phenanthrene	1200	380	ug/kg	1	EPA 8270B
129000	Pyrene	1600	380	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	380	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	380	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-14

July 24, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970617-LD-24-SL0004, 06/17/97, 15:30, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Moisture	25.6	0.03	%	1	
	Total Cyanide	2.2	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.7	mg/kg	1	EPA 6010A
7440382	Total Arsenic	9.9	1.4	mg/kg	1	EPA 7060A
7440393	Total Barium	44	1.3	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.67	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.67	mg/kg	1	EPA 6010A
7440473	Total Chromium	22	1.3	mg/kg	1	EPA 6010A
7440508	Total Copper	19	2.7	mg/kg	1	EPA 6010A
7439921	Total Lead	36	3.4	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.34	mg/kg	1	EPA 7471
7440020	Total Nickel	8.3	2.7	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	5.4	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.3	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	5.4	mg/kg	1	EPA 7841
7440666	Total Zinc	240	2.7	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	68	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	68	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	68	ug/kg	1	EPA 8260A
71432	Benzene	BDL	7	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	7	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	7	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	14	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	7	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	7	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	7	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	7	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	7	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	14	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	14	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0088

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970617-LD-24-SL0004, 06/17/97, 15:30, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	7	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	14	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	68	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	68	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	7	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	68	ug/kg	1	EPA 8260A
10425	Styrene	BDL	7	ug/kg	1	EPA 8260A
109345	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg	1	EPA 8260A
108883	Toluene	BDL	7	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	14	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	14	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg	1	EPA 8260A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	450	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	450	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	450	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	450	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	450	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	450	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	450	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	450	ug/kg	1	EPA 8270B
10755	2-Nitrophenol	BDL	450	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2300	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	450	ug/kg	1	EPA 8270B
108952	Phenol	BDL	450	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

- 0067

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970617-LD-24-SL0004, 06/17/97, 15:30, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	450	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	450	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2300	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	450	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	450	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	450	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	450	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	450	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	450	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	450	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	450	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	450	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	450	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	450	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	450	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	450	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	450	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	450	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	450	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	450	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	450	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	450	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	450	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	450	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	450	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	450	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	450	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2300	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	450	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	450	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	450	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	450	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	450	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	450	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	450	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	450	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	450	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	450	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	450	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	450	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	450	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	450	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	450	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	450	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	450	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

~ 0088



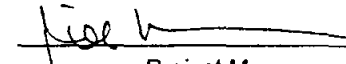
## Sample Description

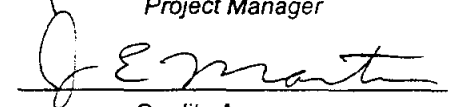
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970617-LD-24-SL0004, 06/17/97, 15:30, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	450	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	450	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	450	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	450	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	450	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	450	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	450	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	450	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-15

July 24, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970617-LD-24-SL0005, 06/17/97, 16:15, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Moisture	22.9	0.01	%	1	
	Total Cyanide	4.1	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	13	6.5	mg/kg	1	EPA 6010A
7440382	Total Arsenic	12.8	1.3	mg/kg	1	EPA 7060A
7440393	Total Barium	180	1.3	mg/kg	1	EPA 6010A
7440417	Total Beryllium	2.1	0.65	mg/kg	1	EPA 6010A
7440439	Total Cadmium	10	0.65	mg/kg	1	EPA 6010A
7440473	Total Chromium	120	1.3	mg/kg	1	EPA 6010A
7440508	Total Copper	92	2.6	mg/kg	1	EPA 6010A
7439921	Total Lead	300	3.2	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.32	mg/kg	1	EPA 7471
7440020	Total Nickel	39	2.6	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	5.2	mg/kg	1	EPA 7740
7440224	Total Silver	2.9	1.3	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	5.2	mg/kg	1	EPA 7841
7440666	Total Zinc	2200	2.6	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	65	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	65	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	65	ug/kg	1	EPA 8260A
71432	Benzene	BDL	6	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	13	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	13	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	13	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0070

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970617-LD-24-SL0005, 06/17/97, 16:15, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	13	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	65	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	65	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	65	ug/kg	1	EPA 8260A
425	Styrene	BDL	6	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	13	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	13	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	430	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	430	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	430	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	430	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	430	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2200	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2200	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	430	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	430	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	430	ug/kg	1	EPA 8270B
55	2-Nitrophenol	BDL	430	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2200	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	430	ug/kg	1	EPA 8270B
108952	Phenol	BDL	430	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0071

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970617-LD-24-SL0005, 06/17/97, 16:15, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	430	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	430	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2200	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	430	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	430	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	430	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	640	430	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	430	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	500	430	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	430	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	480	430	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	430	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	430	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	430	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	430	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	430	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	430	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	430	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	430	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	430	ug/kg	1	EPA 8270B
218019	Chrysene	470	430	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	430	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	430	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	430	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	430	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	430	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	430	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2200	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	430	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	430	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	430	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	430	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	430	ug/kg	1	EPA 8270B
206440	Fluoranthene	690	430	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	430	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	430	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	430	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	430	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	430	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	430	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	430	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	430	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	430	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	430	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	430	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0072

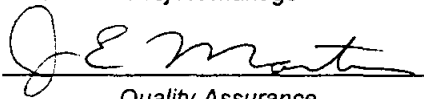
## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970617-LD-24-SL0005, 06/17/97, 16:15, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	430	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	430	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	430	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	430	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	430	ug/kg	1	EPA 8270B
129000	Pyrene	460	430	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	430	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	430	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-16

July 24, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970617-LD-24-SL0006, 06/17/97, 17:00, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	16.9	0.02	%	1	
57125	Total Cyanide	0.9	0.2	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.0	mg/kg	1	EPA 6010A
7440382	Total Arsenic	8.1	1.2	mg/kg	1	EPA 7060A
7440393	Total Barium	23	1.2	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.6	mg/kg	1	EPA 6010
7440439	Total Cadmium	BDL	0.6	mg/kg	1	EPA 6010A
7440473	Total Chromium	17	1.2	mg/kg	1	EPA 6010A
7440508	Total Copper	10	2.4	mg/kg	1	EPA 6010A
7439921	Total Lead	19	3.0	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.30	mg/kg	1	EPA 7471
7440020	Total Nickel	4.6	2.4	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.8	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.2	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.8	mg/kg	1	EPA 7841
7440666	Total Zinc	110	2.4	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	60	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	60	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	60	ug/kg	1	EPA 8260A
71432	Benzene	BDL	6	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	12	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	12	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	12	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0074

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970617-LD-24-SL0006, 06/17/97, 17:00, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	12	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	60	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	60	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
1008101	4-Methyl-2-pentanone	BDL	60	ug/kg	1	EPA 8260A
1000425	Styrene	BDL	6	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	12	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	12	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	400	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	400	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	400	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	400	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	400	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2000	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2000	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
1006445	4-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
1000055	2-Nitrophenol	BDL	400	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2000	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	400	ug/kg	1	EPA 8270B
108952	Phenol	BDL	400	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

0025

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970617-LD-24-SL0006, 06/17/97, 17:00, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	400	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	400	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2000	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	400	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	400	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	400	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	400	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	400	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	400	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	400	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	400	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	400	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	400	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	400	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	400	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	400	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	400	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	400	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	400	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	400	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	400	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	400	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	400	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	400	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2000	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	400	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	400	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	400	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	400	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	400	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	400	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	400	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	400	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	400	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	400	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	400	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	400	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	400	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	400	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	400	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0076



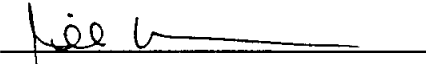
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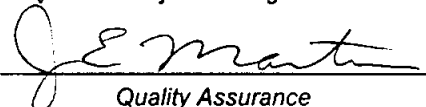
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970617-LD-24-SL0006, 06/17/97, 17:00, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	400	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	400	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	400	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	400	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	400	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	400	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	400	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-17

July 24, 1997

### Sample Description


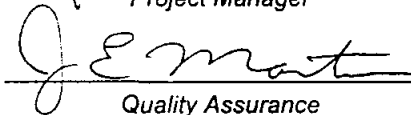
Sloss Industries

Soil, G & M Project #TF0320.015, 970617-LD-24-SL0006MS, 06/17/97, 17:00, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
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Extra sample for QC

Respectfully submitted,

  
Project Manager  
  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-18

July 24, 1997

### Sample Description

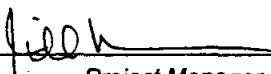
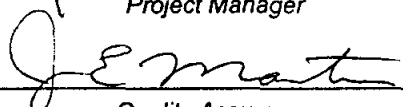
Sloss Industries

Soil, G & M Project #TF0320.015, 970617-LD-24-SL0006MSD, 06/17/97, 17:00, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
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Extra sample for QC

Respectfully submitted,

  
Project Manager  
  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-19

July 24, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970617-LD-24-SL0007, 06/17/97, 17:40, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Moisture	45.8	0.02	%	1	
	Total Cyanide	2.8	0.4	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	9.4	mg/kg	1	EPA 6010A
7440382	Total Arsenic	21	1.9	mg/kg	1	EPA 7060A
7440393	Total Barium	93	1.9	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.94	mg/kg	1	EPA 6010A
7440439	Total Cadmium	2.0	0.94	mg/kg	1	EPA 6010A
7440473	Total Chromium	25	1.9	mg/kg	1	EPA 6010A
7440508	Total Copper	29	3.8	mg/kg	1	EPA 6010A
7439921	Total Lead	76	4.7	mg/kg	1	EPA 6010A
7439976	Total Mercury	0.51	0.47	mg/kg	1	EPA 7471
7440020	Total Nickel	24	3.8	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	7.5	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.9	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	7.5	mg/kg	1	EPA 7841
7440666	Total Zinc	610	3.8	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	93	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	93	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	93	ug/kg	1	EPA 8260A
71432	Benzene	BDL	9	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	9	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	9	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	19	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	9	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	9	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	9	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	9	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	9	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	19	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	19	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0080

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970617-LD-24-SL0007, 06/17/97, 17:40, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	9	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	9	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	9	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	19	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	9	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	9	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	9	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	9	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	9	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	9	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	9	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	9	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	9	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	9	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	93	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	9	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	93	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	9	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	93	ug/kg	1	EPA 8260A
10425	Styrene	BDL	9	ug/kg	1	EPA 8260A
109345	1,1,2,2-Tetrachloroethane	BDL	9	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	9	ug/kg	1	EPA 8260A
108883	Toluene	BDL	9	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	9	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	9	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	9	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	9	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	9	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	19	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	19	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	9	ug/kg	1	EPA 8260A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	610	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	610	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	610	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	610	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	610	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	3100	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	3100	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	610	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	610	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	610	ug/kg	1	EPA 8270B
755	2-Nitrophenol	BDL	610	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	3100	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	610	ug/kg	1	EPA 8270B
108952	Phenol	BDL	610	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0081

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970617-LD-24-SL0007, 06/17/97, 17:40, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	610	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	610	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	3100	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	610	ug/kg	1	EPA 8270B
208968	Acenaphthylene	780	610	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	610	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	590	610	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	980	610	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	780	610	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	1600	610	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	700	610	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	610	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	610	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	610	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	610	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	610	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	610	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	610	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	610	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	610	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	610	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	610	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	610	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	610	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	610	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	610	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	610	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	3100	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	610	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	610	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	610	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	610	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	610	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	610	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	610	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	610	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	610	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	610	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	610	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	1500	610	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	610	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	610	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	610	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	610	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	610	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0082

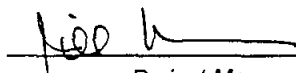
## Sample Description

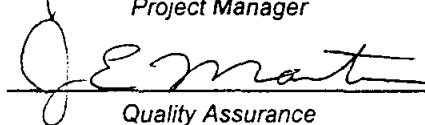
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970617-LD-24-SL0007, 06/17/97, 17:40, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	610	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	610	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	610	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	610	ug/kg	1	EPA 8270B
35018	Phenanthrene	BDL	610	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	610	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	610	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	610	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin  
Report No.: 84221-20

July 24, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970618-LD-24-SL0008, 06/18/97, 9:55, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	24.0	0.05	%	1	
57125	Total Cyanide	0.8	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.6	mg/kg	1	EPA 6010A
7440382	Total Arsenic	9.0	1.3	mg/kg	1	EPA 7060A
7440393	Total Barium	46	1.3	mg/kg	1	EPA 6010
7440417	Total Beryllium	BDL	0.66	mg/kg	1	EPA 6010,
7440439	Total Cadmium	1.2	0.66	mg/kg	1	EPA 6010A
7440473	Total Chromium	10	1.3	mg/kg	1	EPA 6010A
7440508	Total Copper	21	2.6	mg/kg	1	EPA 6010A
7439921	Total Lead	49	3.3	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.33	mg/kg	1	EPA 7471
7440020	Total Nickel	12	2.6	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.0	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.3	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.0	mg/kg	1	EPA 7841
7440666	Total Zinc	460	2.6	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	66	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	66	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	66	ug/kg	1	EPA 8260A
71432	Benzene	BDL	7	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	7	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	7	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	13	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	7	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	7	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	7	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	7	ug/kg	1	EPA 8260
67663	Chloroform	BDL	7	ug/kg	1	EPA 8260
74873	Chloromethane	BDL	13	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	13	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0084



## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0008, 06/18/97, 9:55, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	7	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	13	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	66	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	66	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	7	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	66	ug/kg	1	EPA 8260A
1425	Styrene	BDL	7	ug/kg	1	EPA 8260A
19345	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg	1	EPA 8260A
108883	Toluene	BDL	7	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	13	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	13	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	430	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	430	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	430	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	430	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	430	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2200	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2200	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	430	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	430	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	430	ug/kg	1	EPA 8270B
155	2-Nitrophenol	BDL	430	ug/kg	1	EPA 8270B
150027	4-Nitrophenol	BDL	2200	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	430	ug/kg	1	EPA 8270B
108952	Phenol	BDL	430	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0085

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0008, 06/18/97, 9:55, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	430	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	430	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2200	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	430	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	430	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	430	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	430	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	430	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	430	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	430	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	430	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	430	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	430	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	430	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	430	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	430	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	430	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	430	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	430	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	430	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	430	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	430	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	430	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	430	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	430	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	430	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	430	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2200	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	430	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	430	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	430	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	430	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	430	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	430	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	430	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	430	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	430	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	430	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	430	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	430	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	430	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	430	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	430	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	430	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	430	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0085

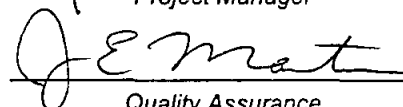
## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0008, 06/18/97, 9:55, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	430	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	430	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	430	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	430	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	430	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	430	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	430	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	430	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin  
Report No.: 84221-21

July 24, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970618-LD-24-SL0009, 06/18/97, 10:10, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method	
57125	Moisture	25.5	0.02	%	1	EPA 9010A	
	Total Cyanide	0.8	0.3	mg/kg	1		
Priority Pollutant Metals							
Metals							
7440360	Total Antimony	BDL	6.7	mg/kg	1	EPA 6010A	
7440382	Total Arsenic	9.1	1.3	mg/kg	1	EPA 7060A	
7440393	Total Barium	28	1.3	mg/kg	1	EPA 6010	
7440417	Total Beryllium	BDL	0.67	mg/kg	1	EPA 6010A	
7440439	Total Cadmium	BDL	0.67	mg/kg	1	EPA 6010A	
7440473	Total Chromium	8.1	1.3	mg/kg	1	EPA 6010A	
7440508	Total Copper	12	2.7	mg/kg	1	EPA 6010A	
7439921	Total Lead	13	3.4	mg/kg	1	EPA 6010A	
7439976	Total Mercury	BDL	0.36	mg/kg	1	EPA 7471	
7440020	Total Nickel	15	2.7	mg/kg	1	EPA 6010A	
7782492	Total Selenium	BDL	5.4	mg/kg	1	EPA 7740	
7440224	Total Silver	BDL	1.3	mg/kg	1	EPA 6010A	
7440280	Total Thallium	BDL	5.4	mg/kg	1	EPA 7841	
7440666	Total Zinc	120	2.7	mg/kg	1	EPA 6010A	
Volatile Organics (EPA 8260A)							
67641	Acetone	BDL	68	ug/kg	1	EPA 8260A	
107028	Acrolein	BDL	68	ug/kg	1	EPA 8260A	
107131	Acrylonitrile	BDL	68	ug/kg	1	EPA 8260A	
71432	Benzene	BDL	7	ug/kg	1	EPA 8260A	
75274	Bromodichloromethane	BDL	7	ug/kg	1	EPA 8260A	
75252	Bromoform	BDL	7	ug/kg	1	EPA 8260A	
74839	Bromomethane	BDL	14	ug/kg	1	EPA 8260A	
75150	Carbon disulfide	BDL	7	ug/kg	1	EPA 8260A	
56235	Carbon tetrachloride	BDL	7	ug/kg	1	EPA 8260A	
108907	Chlorobenzene	BDL	7	ug/kg	1	EPA 8260A	
75003	Chloroethane	BDL	7	ug/kg	1	EPA 8260	
67663	Chloroform	BDL	7	ug/kg	1	EPA 8260	
74873	Chloromethane	BDL	14	ug/kg	1	EPA 8260A	
110758	2-Chloroethylvinyl ether	BDL	14	ug/kg	1	EPA 8260A	

BDL - Below Detection Limit

Results reported on a dry weight basis

0083

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0009, 06/18/97, 10:10, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	7	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	14	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	68	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	68	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	7	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	68	ug/kg	1	EPA 8260A
1425	Styrene	BDL	7	ug/kg	1	EPA 8260A
12345	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg	1	EPA 8260A
108883	Toluene	BDL	7	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	14	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	14	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	440	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	440	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	440	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	440	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	440	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	440	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	440	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	440	ug/kg	1	EPA 8270B
755	2-Nitrophenol	BDL	440	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2300	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	440	ug/kg	1	EPA 8270B
108952	Phenol	BDL	440	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0083

Page 2 of 4

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0009, 06/18/97, 10:10, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	440	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	440	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2300	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	440	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	440	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	440	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	440	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	440	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	440	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	440	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	440	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	440	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	440	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	440	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	440	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	440	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	440	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	440	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	440	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	440	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	440	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	440	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	440	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	440	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	440	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	440	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	440	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2300	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	440	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	440	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	440	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	440	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	440	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	440	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	440	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	440	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	440	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	440	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	440	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	440	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	440	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	440	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	440	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	440	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	440	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0090

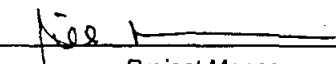
## Sample Description

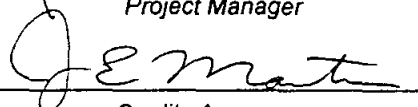
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0009, 06/18/97, 10:10, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	440	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	440	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	440	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	440	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	440	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	440	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	440	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	440	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-22

July 24, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970618-LD-24-SL0010, 06/18/97, 10:40, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Moisture	26.9	0.01	%	1	
	Total Cyanide	1.7	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.8	mg/kg	1	EPA 6010A
7440382	Total Arsenic	16.4	1.4	mg/kg	1	EPA 7060A
7440393	Total Barium	100	1.4	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.68	mg/kg	1	EPA 6010A
7440439	Total Cadmium	2.3	0.68	mg/kg	1	EPA 6010A
7440473	Total Chromium	162	1.4	mg/kg	1	EPA 6010A
7440508	Total Copper	41	2.7	mg/kg	1	EPA 6010A
7439921	Total Lead	120	3.4	mg/kg	1	EPA 6010A
7439976	Total Mercury	0.35	0.34	mg/kg	1	EPA 7471
7440020	Total Nickel	23	2.7	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	5.5	mg/kg	1	EPA 7740
7440224	Total Silver	1.6	1.4	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	5.5	mg/kg	1	EPA 7841
7440666	Total Zinc	780	2.7	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	68	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	68	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	68	ug/kg	1	EPA 8260A
71432	Benzene	BDL	7	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	7	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	7	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	14	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	7	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	7	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	7	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	7	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	7	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	14	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	14	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0092



**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0010, 06/18/97, 10:40, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	7	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	14	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	68	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	68	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	7	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	68	ug/kg	1	EPA 8260A
425	Styrene	BDL	7	ug/kg	1	EPA 8260A
345	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg	1	EPA 8260A
108883	Toluene	BDL	7	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	14	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	14	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	450	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	450	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	450	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	450	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	450	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	450	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	450	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	450	ug/kg	1	EPA 8270B
55	2-Nitrophenol	BDL	450	ug/kg	1	EPA 8270B
10027	4-Nitrophenol	BDL	2300	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	450	ug/kg	1	EPA 8270B
108952	Phenol	BDL	450	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0010, 06/18/97, 10:40, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	450	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	450	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2300	ug/kg	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	450	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	450	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	450	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	450	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	450	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	450	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	450	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	450	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	450	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	450	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	450	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	450	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	450	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	450	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	450	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	450	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	450	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	450	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	450	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	450	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	450	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	450	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	450	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	450	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2300	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	450	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	450	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	450	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	450	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	450	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	450	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	450	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	450	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	450	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	450	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	450	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	450	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	450	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	450	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	450	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	450	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	450	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0004


**Sample Description**

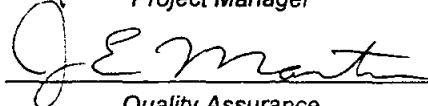
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0010, 06/18/97, 10:40, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	450	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	450	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	450	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	450	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	450	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	450	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	450	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	450	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin  
Report No.: 84221-23

July 24, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970618-LD-24-SL0011, 06/18/97, 11:15, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Moisture	21.0	0.02	%	1	
	Total Cyanide	0.7	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.3	mg/kg	1	EPA 6010A
7440382	Total Arsenic	9.9	1.3	mg/kg	1	EPA 7060A
7440393	Total Barium	160	1.3	mg/kg	1	EPA 6010A
7440417	Total Beryllium	1.4	0.63	mg/kg	1	EPA 6010A
7440439	Total Cadmium	2.0	0.63	mg/kg	1	EPA 6010A
7440473	Total Chromium	25	1.3	mg/kg	1	EPA 6010A
7440508	Total Copper	39	2.5	mg/kg	1	EPA 6010A
7439921	Total Lead	97	3.2	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.32	mg/kg	1	EPA 7471
7440020	Total Nickel	17	2.5	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	5.1	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.3	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	5.1	mg/kg	1	EPA 7841
7440666	Total Zinc	740	2.5	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	63	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	63	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	63	ug/kg	1	EPA 8260A
71432	Benzene	BDL	6	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	13	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	13	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	13	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0086

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0011, 06/18/97, 11:15, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	13	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	63	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	63	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
9101	4-Methyl-2-pentanone	BDL	63	ug/kg	1	EPA 8260A
10425	Styrene	BDL	6	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	13	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	13	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	420	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	420	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	420	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	420	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	420	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2200	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2200	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	420	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	420	ug/kg	1	EPA 8270B
5445	4-Methylphenol	BDL	420	ug/kg	1	EPA 8270B
55	2-Nitrophenol	BDL	420	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2200	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	420	ug/kg	1	EPA 8270B
108952	Phenol	BDL	420	ug/kg	1	EPA 8270B

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0011, 06/18/97, 11:15, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	420	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	420	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2200	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	420	ug/kg	1	EPA 8270B
208968	Acenaphthylene	568	420	ug/kg	1	EPA 8270B
120127	Anthracene	730	420	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	3500	420	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	2000	420	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	1800	420	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	2000	420	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	2100	420	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	420	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	420	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	420	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	420	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	420	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	420	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	420	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	420	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	420	ug/kg	1	EPA 8270B
218019	Chrysene	2100	420	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	420	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	420	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	420	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	420	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	420	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	420	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2200	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	420	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	420	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	420	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	420	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	420	ug/kg	1	EPA 8270B
206440	Fluoranthene	3200	420	ug/kg	1	EPA 8270B
86737	Fluorene	490	420	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	420	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	420	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	420	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	420	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	1800	420	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	420	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	420	ug/kg	1	EPA 8270B
91203	Naphthalene	490	420	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	420	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	420	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0003

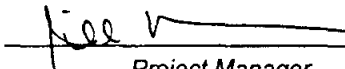
**Sample Description**

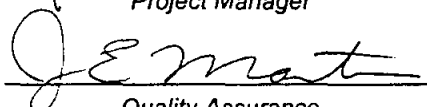
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0011, 06/18/97, 11:15, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	420	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	420	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	420	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	420	ug/kg	1	EPA 8270B
85018	Phenanthrene	1700	420	ug/kg	1	EPA 8270B
129000	Pyrene	3100	420	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	420	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	420	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
1500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-24

July 24, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970618-LD-24-SL0012, 06/18/97, 11:45, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Moisture	18.7	0.02	%	1	
	Total Cyanide	1.0	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.2	mg/kg	1	EPA 6010A
7440382	Total Arsenic	13.5	1.2	mg/kg	1	EPA 7060A
7440393	Total Barium	99	1.2	mg/kg	1	EPA 6010A
7440417	Total Beryllium	1.2	0.62	mg/kg	1	EPA 6010A
7440439	Total Cadmium	1.3	0.62	mg/kg	1	EPA 6010A
7440473	Total Chromium	15	1.2	mg/kg	1	EPA 6010A
7440508	Total Copper	30	2.5	mg/kg	1	EPA 6010A
7439921	Total Lead	56	3.1	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.31	mg/kg	1	EPA 7471
7440020	Total Nickel	45	2.5	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.9	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.2	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.9	mg/kg	1	EPA 7841
7440666	Total Zinc	470	2.5	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	150	62	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	62	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	62	ug/kg	1	EPA 8260A
71432	Benzene	BDL	6	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	12	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	12	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	12	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0100



## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0012, 06/18/97, 11:45, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	12	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	62	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	62	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	62	ug/kg	1	EPA 8260A
10425	Styrene	BDL	6	ug/kg	1	EPA 8260A
19345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	12	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	12	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	410	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	410	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	410	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	410	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	410	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2100	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2100	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	410	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	410	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	410	ug/kg	1	EPA 8270B
755	2-Nitrophenol	BDL	410	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2100	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	410	ug/kg	1	EPA 8270B
108952	Phenol	BDL	410	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0101

Page 2 of 4

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0012, 06/18/97, 11:45, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	410	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	410	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2100	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	410	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	410	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	410	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	760	410	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	540	410	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	660	410	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	720	410	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	660	410	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	410	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	410	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	410	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	410	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	410	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	410	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	410	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	410	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	410	ug/kg	1	EPA 8270B
218019	Chrysene	560	410	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	410	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	410	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	410	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	410	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	410	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	410	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2100	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	410	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	410	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	410	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	410	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	410	ug/kg	1	EPA 8270B
206440	Fluoranthene	860	410	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	410	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	410	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	410	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	410	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	410	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	650	410	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	410	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	410	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	410	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	410	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	410	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

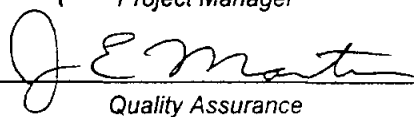
## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0012, 06/18/97, 11:45, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	410	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	410	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	410	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	410	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	410	ug/kg	1	EPA 8270B
129000	Pyrene	590	410	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	410	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	410	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-25

July 24, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970618-LD-24-SL0013, 06/18/97, 15:40, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	27.0	0.03	%	1	
57125	Total Cyanide	1.2	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.8	mg/kg	1	EPA 6010A
7440382	Total Arsenic	7.1	1.4	mg/kg	1	EPA 7060A
7440393	Total Barium	81	1.4	mg/kg	1	EPA 6010A
7440417	Total Beryllium	1.2	0.68	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.68	mg/kg	1	EPA 6010A
7440473	Total Chromium	11	1.4	mg/kg	1	EPA 6010A
7440508	Total Copper	15	2.7	mg/kg	1	EPA 6010A
7439921	Total Lead	13	3.4	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.34	mg/kg	1	EPA 7471
7440020	Total Nickel	18	2.7	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	5.5	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.4	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	5.5	mg/kg	1	EPA 7841
7440666	Total Zinc	68	2.7	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	68	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	68	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	68	ug/kg	1	EPA 8260A
71432	Benzene	BDL	7	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	7	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	7	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	14	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	7	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	7	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	7	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	7	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	7	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	14	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	14	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0104

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0013, 06/18/97, 15:40, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	7	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	14	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	68	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	68	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	7	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	68	ug/kg	1	EPA 8260A
425	Styrene	BDL	7	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg	1	EPA 8260A
108883	Toluene	BDL	7	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	14	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	14	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	450	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	450	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	450	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	450	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	450	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	450	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	450	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	450	ug/kg	1	EPA 8270B
55	2-Nitrophenol	BDL	450	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2300	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	450	ug/kg	1	EPA 8270B
108952	Phenol	BDL	450	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0013, 06/18/97, 15:40, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	450	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	450	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2300	ug/kg	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	450	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	450	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	450	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	450	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	450	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	450	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	450	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	450	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	450	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	450	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	450	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	450	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	450	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	450	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	450	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	450	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	450	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	450	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	450	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	450	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	450	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	450	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	450	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	450	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2300	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	450	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	450	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	450	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	450	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	450	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	450	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	450	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	450	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	450	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	450	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	450	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	450	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	450	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	450	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	450	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	450	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	450	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis


**Sample Description**


Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0013, 06/18/97, 15:40, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	450	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	450	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	450	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	450	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	450	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	450	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	450	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	450	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-26

July 24, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970618-LD-24-SL0014, 06/18/97, 15:20, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Moisture	33.1	0.02	%	1	
	Total Cyanide	4.3	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	7.5	mg/kg	1	EPA 6010A
7440382	Total Arsenic	19	1.5	mg/kg	1	EPA 7060A
7440393	Total Barium	140	1.5	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.7	mg/kg	1	EPA 6010A
7440439	Total Cadmium	4.2	0.7	mg/kg	1	EPA 6010A
7440473	Total Chromium	22	1.5	mg/kg	1	EPA 6010A
7440508	Total Copper	68	3.0	mg/kg	1	EPA 6010A
7439921	Total Lead	190	3.7	mg/kg	1	EPA 6010A
7439976	Total Mercury	0.52	0.37	mg/kg	1	EPA 7471
7440020	Total Nickel	26	3.0	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	6.0	mg/kg	1	EPA 7740
7440224	Total Silver	2.0	1.5	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	6.0	mg/kg	1	EPA 7841
7440666	Total Zinc	1500	3.0	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	75	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	75	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	75	ug/kg	1	EPA 8260A
71432	Benzene	BDL	7	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	7	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	7	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	15	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	7	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	7	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	7	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	7	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	7	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	15	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	15	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0198



## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0014, 06/18/97, 15:20, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	7	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	15	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	75	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	75	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	7	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	75	ug/kg	1	EPA 8260A
100425	Styrene	BDL	7	ug/kg	1	EPA 8260A
100345	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg	1	EPA 8260A
108883	Toluene	BDL	7	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	15	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	15	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg	1	EPA 8260A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	4900	ug/kg	10	EPA 8270B
95578	2-Chlorophenol	BDL	4900	ug/kg	10	EPA 8270B
120832	2,4-Dichlorophenol	BDL	4900	ug/kg	10	EPA 8270B
87650	2,6-Dichlorophenol	BDL	4900	ug/kg	10	EPA 8270B
105679	2,4-Dimethylphenol	BDL	4900	ug/kg	10	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	25000	ug/kg	10	EPA 8270B
51285	2,4-Dinitrophenol	BDL	25000	ug/kg	10	EPA 8270B
95487	2-Methylphenol	BDL	4900	ug/kg	10	EPA 8270B
108394	3-Methylphenol	BDL	4900	ug/kg	10	EPA 8270B
106445	4-Methylphenol	BDL	4900	ug/kg	10	EPA 8270B
100755	2-Nitrophenol	BDL	4900	ug/kg	10	EPA 8270B
1005027	4-Nitrophenol	BDL	25000	ug/kg	10	EPA 8270B
87865	Pentachlorophenol	BDL	4900	ug/kg	10	EPA 8270B
108952	Phenol	BDL	4900	ug/kg	10	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0014, 06/18/97, 15:20, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	4900	ug/kg	10	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	4900	ug/kg	10	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	25000	ug/kg	10	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	4900	ug/kg	10	EPA 8270B
208968	Acenaphthylene	9400	4900	ug/kg	10	EPA 8270B
120127	Anthracene	10000	4900	ug/kg	10	EPA 8270B
56553	Benzo(a)anthracene	63000	4900	ug/kg	10	EPA 8270B
205992	Benzo(b)fluoranthene	33000	4900	ug/kg	10	EPA 8270B
207089	Benzo(k)fluoranthene	16000	4900	ug/kg	10	EPA 8270B
191242	Benzo(ghi)perylene	22000	4900	ug/kg	10	EPA 8270B
50328	Benzo(a)pyrene	36000	4900	ug/kg	10	EPA 8270B
100516	Benzyl Alcohol	BDL	4900	ug/kg	10	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	4900	ug/kg	10	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	4900	ug/kg	10	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	4900	ug/kg	10	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	4900	ug/kg	10	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	4900	ug/kg	10	EPA 8270B
106478	p-Chloroaniline	BDL	4900	ug/kg	10	EPA 8270B
91587	2-Chloronaphthalene	BDL	4900	ug/kg	10	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	4900	ug/kg	10	EPA 8270B
218019	Chrysene	39000	4900	ug/kg	10	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	4900	ug/kg	10	EPA 8270B
132649	Dibenzofuran	BDL	4900	ug/kg	10	EPA 8270B
84742	Di-n-butylphthalate	BDL	4900	ug/kg	10	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	4900	ug/kg	10	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	4900	ug/kg	10	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	4900	ug/kg	10	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	25000	ug/kg	10	EPA 8270B
84662	Diethylphthalate	BDL	4900	ug/kg	10	EPA 8270B
131113	Dimethylphthalate	BDL	4900	ug/kg	10	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	4900	ug/kg	10	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	4900	ug/kg	10	EPA 8270B
117840	Di-n-octylphthalate	BDL	4900	ug/kg	10	EPA 8270B
206440	Fluoranthene	46000	4900	ug/kg	10	EPA 8270B
86737	Fluorene	BDL	4900	ug/kg	10	EPA 8270B
118741	Hexachlorobenzene	BDL	4900	ug/kg	10	EPA 8270B
87683	Hexachlorobutadiene	BDL	4900	ug/kg	10	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	4900	ug/kg	10	EPA 8270B
67721	Hexachloroethane	BDL	4900	ug/kg	10	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	22000	4900	ug/kg	10	EPA 8270B
78591	Isophorone	BDL	4900	ug/kg	10	EPA 8270B
91576	2-Methylnaphthalene	BDL	4900	ug/kg	10	EPA 8270B
91203	Naphthalene	6300	4900	ug/kg	10	EPA 8270B
88744	2-Nitroaniline	BDL	4900	ug/kg	10	EPA 8270B
99092	3-Nitroaniline	BDL	4900	ug/kg	10	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0110

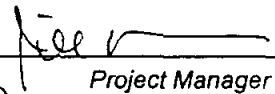
**Sample Description**

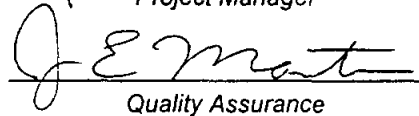
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0014, 06/18/97, 15:20, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	4900	ug/kg	10	EPA 8270B
98953	Nitrobenzene	BDL	4900	ug/kg	10	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	4900	ug/kg	10	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	4900	ug/kg	10	EPA 8270B
85018	Phenanthrene	14000	4900	ug/kg	10	EPA 8270B
129000	Pyrene	55000	4900	ug/kg	10	EPA 8270B
110861	Pyridine	BDL	4900	ug/kg	10	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	4900	ug/kg	10	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-27

July 24, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970618-LD-24-SL0015, 06/18/97, 14:15, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	19.0	0.01	%	1	
57125	Total Cyanide	5.6	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.2	mg/kg	1	EPA 6010A
7440382	Total Arsenic	7.7	1.2	mg/kg	1	EPA 7060A
7440393	Total Barium	65	1.2	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.62	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.62	mg/kg	1	EPA 6010A
7440473	Total Chromium	12	1.2	mg/kg	1	EPA 6010A
7440508	Total Copper	14	2.5	mg/kg	1	EPA 6010A
7439921	Total Lead	21	3.1	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.31	mg/kg	1	EPA 7471
7440020	Total Nickel	12	2.5	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.9	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.2	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.9	mg/kg	1	EPA 7841
7440666	Total Zinc	160	2.5	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	62	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	62	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	62	ug/kg	1	EPA 8260A
71432	Benzene	BDL	6	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	12	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	12	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	12	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0112

Page 1 of 4

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0015, 06/18/97, 14:15, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	12	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	62	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	62	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	62	ug/kg	1	EPA 8260A
125	Styrene	BDL	6	ug/kg	1	EPA 8260A
7345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	12	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	12	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	410	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	410	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	410	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	410	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	410	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2100	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2100	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	410	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	410	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	410	ug/kg	1	EPA 8270B
55	2-Nitrophenol	BDL	410	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2100	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	410	ug/kg	1	EPA 8270B
108952	Phenol	BDL	410	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0015, 06/18/97, 14:15, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	410	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	410	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2100	ug/kg	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	410	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	410	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	410	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	790	410	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	410	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	410	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	410	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	430	410	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	410	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	410	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	410	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	410	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	410	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	410	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	410	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	410	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	410	ug/kg	1	EPA 8270B
218019	Chrysene	530	410	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	410	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	410	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	410	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	410	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	410	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	410	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2100	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	410	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	410	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	410	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	410	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	410	ug/kg	1	EPA 8270B
206440	Fluoranthene	1100	410	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	410	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	410	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	410	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	410	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	410	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	410	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	410	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	410	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	410	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	410	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	410	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

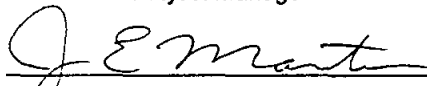
**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0015, 06/18/97, 14:15, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	410	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	410	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	410	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	410	ug/kg	1	EPA 8270B
85018	Phenanthrene	500	410	ug/kg	1	EPA 8270B
129000	Pyrene	790	410	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	410	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	410	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-28

July 24, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970618-LD-24-SL0016, 06/18/97, 13:15, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	25.7	0.02	%	1	
57125	Total Cyanide	2.0	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	7.4	6.7	mg/kg	1	EPA 6010A
7440382	Total Arsenic	13.7	1.3	mg/kg	1	EPA 7060A
7440393	Total Barium	190	1.3	mg/kg	1	EPA 6010A
7440417	Total Beryllium	1.7	0.67	mg/kg	1	EPA 6010A
7440439	Total Cadmium	7.3	0.67	mg/kg	1	EPA 6010A
7440473	Total Chromium	47	1.3	mg/kg	1	EPA 6010A
7440508	Total Copper	79	2.7	mg/kg	1	EPA 6010A
7439921	Total Lead	260	3.4	mg/kg	1	EPA 6010A
7439976	Total Mercury	0.63	0.34	mg/kg	1	EPA 7471
7440020	Total Nickel	30	2.7	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	5.4	mg/kg	1	EPA 7740
7440224	Total Silver	3.2	1.3	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	5.4	mg/kg	1	EPA 7841
7440666	Total Zinc	1900	2.7	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	68	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	68	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	68	ug/kg	1	EPA 8260A
71432	Benzene	BDL	7	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	7	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	7	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	14	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	7	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	7	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	7	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	7	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	7	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	14	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	14	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0110



## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0016, 06/18/97, 13:15, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	7	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	14	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	68	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	68	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	7	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	68	ug/kg	1	EPA 8260A
100425	Styrene	BDL	7	ug/kg	1	EPA 8260A
100345	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg	1	EPA 8260A
108883	Toluene	BDL	7	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	14	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	14	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	450	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	450	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	450	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	450	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	450	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	450	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	450	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	450	ug/kg	1	EPA 8270B
100055	2-Nitrophenol	BDL	450	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2300	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	450	ug/kg	1	EPA 8270B
108952	Phenol	BDL	450	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0016, 06/18/97, 13:15, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	450	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	450	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2300	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	460	450	ug/kg	1	EPA 8270B
208968	Acenaphthylene	1400	450	ug/kg	1	EPA 8270B
120127	Anthracene	1000	450	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	5900	450	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	3600	450	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	1500	450	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	3900	450	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	3400	450	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	450	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	450	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	450	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	450	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	450	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	450	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	450	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	450	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	450	ug/kg	1	EPA 8270B
218019	Chrysene	3200	450	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	570	450	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	450	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	450	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	450	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	450	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	450	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2300	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	450	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	450	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	450	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	450	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	450	ug/kg	1	EPA 8270B
206440	Fluoranthene	3500	450	ug/kg	1	EPA 8270B
86737	Fluorene	1200	450	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	450	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	450	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	450	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	450	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	3600	450	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	450	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	450	ug/kg	1	EPA 8270B
91203	Naphthalene	680	450	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	450	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	450	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

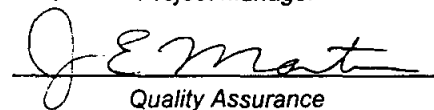
**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970618-LD-24-SL0016, 06/18/97, 13:15, received 06/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	450	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	450	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	450	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	450	ug/kg	1	EPA 8270B
85018	Phenanthrene	2600	450	ug/kg	1	EPA 8270B
129000	Pyrene	5200	450	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	450	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	450	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-29

October 1, 1997

### Sample Description

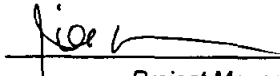
Sloss Industries  
Aqueous,, Batch #30875,,

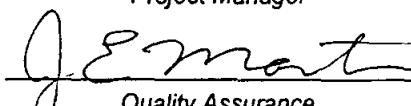
CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270E
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
100027	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B

**Sample Description**  
 Sloss Industries  
 Aqueous,, Batch #30875,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
81	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
 Project Manager

  
 Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-30

October 1, 1997

### Sample Description

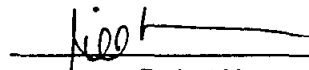
Sloss Industries  
Soil/Sediment,, Batch #30876,,

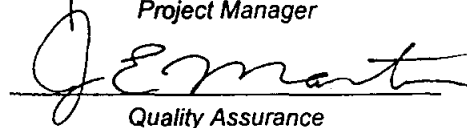
CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	330	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	330	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	330	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	330	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	330	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	1700	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	1700	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	330	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	1700	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	330	ug/kg	1	EPA 8270B
108952	Phenol	BDL	330	ug/kg	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	330	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	330	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	1700	ug/kg	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	330	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	330	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	330	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	330	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	330	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	330	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	330	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	330	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	330	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	330	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	330	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	330	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	330	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	330	ug/kg	1	EPA 8270B

**Sample Description**  
 Sloss Industries  
 Soil/Sediment,, Batch #30876,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106478	p-Chloroaniline	BDL	330	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	330	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	330	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	330	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	330	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	330	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	330	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	1700	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	330	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	330	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	330	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	330	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	330	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	330	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	330	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	330	ug/kg	1	EPA 8270B
8	Hexachlorobutadiene	BDL	330	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	330	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	330	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	330	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	330	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	330	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	330	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B
100016	4-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	330	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	330	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	330	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	330	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	330	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	330	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	330	ug/kg	1	EPA 8270B

Respectfully submitted,

  
 Project Manager

  
 Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-31

October 1, 1997

### Sample Description

Sloss Industries

TCLP,, Batch #30960/30977/30979/31041,,

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)							
5103719	D020 alpha-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
5564347	D020 gamma-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
	D026 Total Cresol	BDL	0.05	mg/l	200.0	1	EPA 1311
94757	D016 2,4-D	BDL	0.05	mg/l	10.0	1	EPA 1311
106467	D027 1,4-Dichlorobenzene	BDL	0.05	mg/l	7.5	1	EPA 1311
121142	D030 2,4-Dinitrotoluene	BDL	0.05	mg/l	0.13	1	EPA 1311
72208	D012 Endrin	BDL	0.001	mg/l	0.02	1	EPA 1311
76448	D031 Heptachlor	BDL	0.001	mg/l	0.008	1	EPA 1311
1024573	D031 Heptachlor epoxide	BDL	0.001	mg/l	0.008	1	EPA 1311
118741	D032 Hexachlorobenzene	BDL	0.05	mg/l	0.13	1	EPA 1311
87683	D033 Hexachlorobutadiene	BDL	0.05	mg/l	0.5	1	EPA 1311
67721	D034 Hexachloroethane	BDL	0.05	mg/l	3.0	1	EPA 1311
58899	D013 Lindane	BDL	0.01	mg/l	0.4	1	EPA 1311
72435	D014 Methoxychlor	BDL	0.5	mg/l	10.0	1	EPA 1311
98953	D036 Nitrobenzene	BDL	0.05	mg/l	2.0	1	EPA 1311
87865	D037 Pentachlorophenol	BDL	0.05	mg/l	100.0	1	EPA 1311
8001352	D015 Toxaphene	BDL	0.05	mg/l	0.5	1	EPA 1311
95954	D041 2,4,5-Trichlorophenol	BDL	0.05	mg/l	400.0	1	EPA 1311
88062	D042 2,4,6-Trichlorophenol	BDL	0.05	mg/l	2.0	1	EPA 1311
93721	D017 2,4,5-TP Silvex	BDL	0.1	mg/l	1.0	1	EPA 1311
110861	D038 Pyridine	BDL	0.05	mg/l	5.0	1	EPA 1311
Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)							
71432	D018 Benzene	BDL	0.02	mg/l	0.5	1	EPA 1311
56235	D019 Carbon tetrachloride	BDL	0.02	mg/l	0.5	1	EPA 1311
108907	D021 Chlorobenzene	BDL	0.02	mg/l	100.0	1	EPA 1311
67663	D022 Chloroform	BDL	0.02	mg/l	6.0	1	EPA 1311
107062	D028 1,2-Dichloroethane	BDL	0.02	mg/l	0.5	1	EPA 1311
75354	D029 1,1-Dichloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
78933	D035 Methyl ethyl ketone	BDL	0.5	mg/l	200.0	1	EPA 1311
127184	D039 Tetrachloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311

BDL - Below Detection Limit

0124

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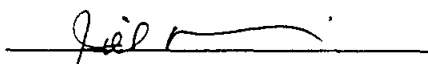
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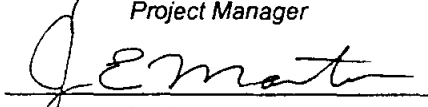
Sloss Industries

TCLP,, Batch #30960/30977/30979/31041,,

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
79016	D040 Trichloroethene	BDL	0.02	mg/l	0.5	1	EPA 1311
75014	D043 Vinyl chloride	BDL	0.02	mg/l	0.2	1	EPA 1311

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-32

October 1, 1997

### Sample Description

Sloss Industries  
Aqueous,, Batch #30976,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

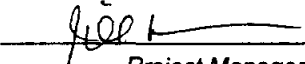
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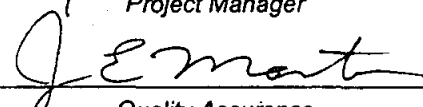
Page 1 of 2

**Sample Description**  
Sloss Industries  
Aqueous,, Batch #30976,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin

Report No.: 84221-33

October 1, 1997

### Sample Description

Sloss Industries  
Soil/Sediment,, Batch #30978,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	50	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/kg	1	EPA 8260A
71432	Benzene	BDL	5	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	5	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	5	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/kg	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/kg	1	EPA 8260A

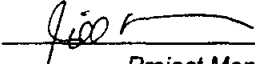
BDL - Below Detection Limit

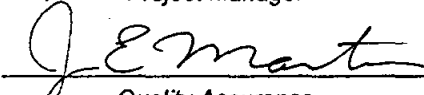
0128

**Sample Description**  
Sloss Industries  
Soil/Sediment,, Batch #30978,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/kg	1	EPA 8260A
100425	Styrene	BDL	5	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/kg	1	EPA 8260A
108883	Toluene	BDL	5	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	5	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	5	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/kg	1	EPA 8260A

Respectfully submitted,

  
\_\_\_\_\_  
Project Manager

  
\_\_\_\_\_  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike Griffin  
Report No.: 84221-34

October 1, 1997

### Sample Description

Sloss Industries  
Soil/Sediment,, Batch #31017,,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	50	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/kg	1	EPA 8260A
71432	Benzene	BDL	5	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	5	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	5	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/kg	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/kg	1	EPA 8260,
78933	2-Butanone	BDL	50	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/kg	1	EPA 8260A

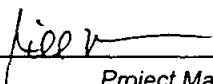
BDL - Below Detection Limit

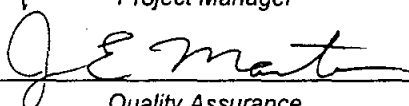
0130

**Sample Description**  
Sloss Industries  
Soil/Sediment,, Batch #31017,...

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/kg	1	EPA 8260A
100425	Styrene	BDL	5	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/kg	1	EPA 8260A
108883	Toluene	BDL	5	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	5	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	5	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/kg	1	EPA 8260A

Respectfully submitted,

  
Project Manager

  
Quality Assurance

Analytical Services Inc. Batch QC  
For Report Number :84221  
Base Neutrals / Acids

Matrix : Aqueous

Batch # 30875

Method : EPA 8270

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
Phenol	13	13	1	12 - 89	0 - 42
2-Chlorophenol	46	46	0	27 - 123	0 - 40
1,4-Dichlorobenzene	45	45	0	36 - 97	0 - 28
N-Nitrosodipropylamine	55	56	0	41 - 116	0 - 38
1,2,4-Trichlorobenzene	51	50	1	44 - 142	0 - 28
4-Chloro-3-methylphenol	53	52	2	23 - 97	0 - 42
Acenaphthene	58	58	0	46 - 118	0 - 31
2,4-Dinitrotoluene	58	61	5	24 - 96	0 - 38
4-Nitrophenol	19	20	5	10 - 80	0 - 50
Pentachlorophenol	47	47	0	9 - 103	0 - 50
Pyrene	56	57	2	26 - 127	0 - 31

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
Phenol	38	44	15	12 - 89	0 - 42
2-Chlorophenol	56	72	25	27 - 123	0 - 40
1,4-Dichlorobenzene	66	72	9	36 - 97	0 - 28
N-Nitrosodipropylamine	69	77	11	41 - 116	0 - 38
1,2,4-Trichlorobenzene	75	82	9	44 - 142	0 - 28
4-Chloro-3-methylphenol	76	86	12	23 - 97	0 - 42
Acenaphthene	79	87	10	46 - 118	0 - 31
2,4-Dinitrotoluene	81	88	8	24 - 96	0 - 38
4-Nitrophenol	28	46	49	10 - 80	0 - 50
Pentachlorophenol	60	86	36	9 - 103	0 - 50
Pyrene	71	76	7	26 - 127	0 - 31



## Analytical Services Inc. Batch QC

## Surrogate Recovery

## Base Neutrals / Acids

Matrix : Aqueous

Batch # 30875

Method : EPA 8270

## % Recovery Objectives

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S1	2-Fluorophenol	21 - 100
S2	Phenol-d5	10 - 94
S3	Nitrobenzene-d5	35 - 114
S4	2-Fluorobiphenyl	43 - 116
S5	2,4,6-Tribromophenol	10 - 123
S6	Terphenyl-d14	33 - 141

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Sample	File	S1	S2	S3	S4	S5	S6
<hr/>							
84221-1	B8844	18	15	88	84	42	70
84221-2	B8845	29	19	82	80	61	68
84221-9	B8846	40	22	89	85	80	68
84221-10	B8847	39	21	87	85	82	75
84221-10MS	B8848	37	36	90	81	65	67
84221-10MSD	B8849	51	40	98	87	83	72
84201-2	B8852	26	18	77	72	43	28
84201-3	B8853	33	21	82	76	75	59
30875BLK	B8861	26	18	65	73	54	52
^^Note: ALSO 84413-11							
30875LCS	B8862	21	11	54	57	61	46
30875LCSD	B8863	21	11	53	57	60	47
84176-1	A5820	23	21	69	115	79	48
84176-2	A5821	22	10	52	101	17	39
84201-1	A5824	32	28	62	103	101	63
84201-2RR	A5845	50	48	72	110	104	87
84221-1RR	A5846	43	38	71	107	90	78
84177-10RR	A5848	5	3	13	27	11	15
^^Note: MATRIX EFFECT							
84177-12RR	A5849	25	28	53	89	57	38
84177-8RR	A5850	22	12	41	114	14	91
84231-18	A5833	49	52	108	89	60	73
84231-19	A5834	21	14	96	146	67	43
^^Note: MATRIX EFFECT							
84273-2	B8907	37	24	49	57	53	55
84273-3	A5876	33	28	46	92	37	76
84285	A5873			60	108		61
^^Note: BN ONLY							
84413-9	B8960	31	21	78	82	81	62
84413-9DUP	B8971	27	18	69	75	82	62

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Sample Batch Information  
Base Neutrals / Acids Method : EPA 8270

Sample ID	Preparation			Preparation Notes	Analysis			Inst #
	Date	Time	By		Date	Time	By	
84176-1	06/22/97	1300	MO		06/24/97	1213	tas	5970
84176-2	06/22/97	1300	MO		06/24/97	1246	tas	5970
84201-1	06/22/97	1300	MO		06/24/97	1425	TAS	5970
30875BLK	06/22/97	1300	MO		06/24/97	0953	RFA	5971
30875LCS	06/22/97	1300	MO		06/24/97	1026	RFA	5971
30875LCSD	06/22/97	1300	MO		06/24/97	1059	RFA	5971
84201-2	06/22/97	1400	MO		06/24/97	0118	RFA	5971
84201-3	06/22/97	1400	MO		06/24/97	0152	RFA	5971
84221-1	06/22/97	1400	MO		06/23/97	2050	RFA	5971
84221-10	06/22/97	1400	MO		06/23/97	2231	RFA	5971
84221-2	06/22/97	1400	MO		06/23/97	2124	RFA	5971
84221-9	06/22/97	1400	MO		06/23/97	2158	RFA	5971
84231-18	06/22/97	1400	MO		06/24/97	1920	TAS	5970
84231-19	06/22/97	1400	MO		06/23/97	1953	RFA	5971
84221-10MS	06/22/97	1400	MO		06/23/97	2305	RFA	5971
84221-10MSD	06/22/97	1400	MO		06/23/97	2338	RFA	5971
84177-8	06/24/97	1430	JLC		06/25/97	1753	TAS	5970
84177-10	06/24/97	1430	JLC		06/25/97	1649	TAS	5970
84177-12	06/24/97	1430	JLC		06/25/97	1721	TAS	5970
84285	06/24/97	1430	JLC		06/26/97	1240	TAS	5970
84273-2	06/24/97	1430	JLC		06/25/97	1245	DMB	597
84273-3	06/24/97	1430	JLC		06/26/97	1412	TAS	5970
84201-2RR	06/24/97	1430	JLC		06/25/97	1300	TAS	5970
84221-1RR	06/24/97	1430	JLC		06/25/97	1332	TAS	5970
84177-10RR	06/24/97	1430	JLC		06/25/97	1649	TAS	5970
84177-12RR	06/24/97	1430	JLC		06/25/97	1721	TAS	5970
84177-8RR	06/24/97	1430	JLC		06/25/97	1753	TAS	5970
84413-9	06/27/97	1000	JLC		06/28/97	1623	DMB	5971
84413-9DUP	06/27/97	1000	JLC		06/26/97	2253	TAS	5970

Analytical Services Inc. Batch QC  
 For Report Number :84221  
 Base Neutrals / Acids

Matrix : Soil/Sediment

Batch # 30876

Method : EPA 8270

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
Phenol	38	37	2	26 - 90	0 - 35
2-Chlorophenol	40	39	1	25 - 102	0 - 50
1,4-Dichlorobenzene	35	35	1	28 - 104	0 - 27
N-Nitrosodipropylamine	47	46	3	41 - 126	0 - 38
1,2,4-Trichlorobenzene	38	39	2	38 - 107	0 - 23
4-Chloro-3-methylphenol	45	45	0	26 - 103	0 - 33
Acenaphthene	48	49	1	31 - 137	0 - 19
2,4-Dinitrotoluene	60	59	1	28 - 89	0 - 47
4-Nitrophenol	46	45	3	11 - 114	0 - 50
Pentachlorophenol	54	52	4	17 - 109	0 - 47
Pyrene	58	60	3	35 - 142	0 - 36

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
Phenol	44	35	24	26 - 90	0 - 35
2-Chlorophenol	47	36	26	25 - 102	0 - 50
1,4-Dichlorobenzene	37	29	24	28 - 104	0 - 27
N-Nitrosodipropylamine	46	44	4	41 - 126	0 - 38
1,2,4-Trichlorobenzene	42	38	12	38 - 107	0 - 23
4-Chloro-3-methylphenol	50	42	18	26 - 103	0 - 33
Acenaphthene	51	44	15	31 - 137	0 - 19
2,4-Dinitrotoluene	63	51	21	28 - 89	0 - 47
4-Nitrophenol	56	40	33	11 - 114	0 - 50
Pentachlorophenol	68	50	31	17 - 109	0 - 47
Pyrene	59	53	11	35 - 142	0 - 36

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Base Neutrals / Acids

Matrix : Soil/Sediment      Batch # 30876      Method : EPA 8270

% Recovery Objectives

S1	2-Fluorophenol	25 - 121
S2	Phenol-d5	24 - 113
S3	Nitrobenzene-d5	23 - 120
S4	2-Fluorobiphenyl	30 - 115
S5	2,4,6-Tribromophenol	19 - 122
S6	Terphenyl-d14	18 - 137.

Sample	File	S1	S2	S3	S4	S5	S6
30876BLK	B8824	39	39	43	45	45	59
30876LCS	B8825	37	35	44	47	58	54
30876LCSD	B8826	37	35	44	47	56	56
84221-3	B8827	28	26	35	38	23	35
84221-5	B8828	28	30	35	38	35	35
84221-6	B8829	32	36	46	49	31	41
84221-11	B8830	40	41	42	40	50	43
84221-12	B8831	53	54	59	59	68	71
84221-14	B8832	41	43	47	46	60	54
84221-16	B8833	42	43	46	46	69	61
84221-17MS	B8834	44	43	51	51	70	60
^^Note: 84421-16MS							
84221-18MSD	B8835	33	34	40	41	54	43
^^Note: 84221-16MSD							
84221-25	B8836	41	46	51	49	65	50
84221-20	B8837	53	55	61	58	79	60
84221-21	B8838	44	49	51	44	77	57
84221-22	B8839	49	51	54	48	69	54
84221-11DUP	A5823	47	64	50	89	84	72
84221-24	A5825	39	60	47	93	90	78
84221-27	A5826	48	68	53	98	84	80
84221-15	A5827	30	47	37	62	51	47
84221-13	A5828	45	70	56	98	106	83
84221-19	A5829	43	65	48	83	105	75
84221-23	A5830	51	72	58	98	87	94
84221-28	A5831	54	80	66	101	107	111
84221-26	A5832	59	75	68	90	154	10
^^Note: MATRIX EFFECT NOT USABLE							
84221-26D	A5879	61	87	59	132	51	122
^^Note: 1:10 MATRIX EFFECT							

Sample Batch Information  
Base Neutrals / Acids      Method : EPA 8270

Sample ID	Preparation			Preparation Notes	Analysis			Inst #
	Date	Time	By		Date	Time	By	
84221-11	06/22/97	1300	ASF		06/23/97	1314	RFA	5971
84221-12	06/22/97	1300	ASF		06/23/97	1348	RFA	5971
84221-13	06/22/97	1300	ASF		06/24/97	1636	TAS	5970
84221-14	06/22/97	1300	ASF		06/23/97	1422	RFA	5971
84221-15	06/22/97	1300	ASF		06/24/97	1603	TAS	5970
84221-16	06/22/97	1300	ASF		06/23/97	1456	RFA	5971
84221-17MS	06/22/97	1300	ASF	84221-16MS	06/23/97	1530	RFA	5971
84221-18MSD	06/22/97	1300	ASF	84221-16MSD	06/23/97	1604	RFA	5971
84221-19	06/22/97	1300	ASF		06/24/97	1709	TAS	5970
84221-20	06/22/97	1300	ASF		06/23/97	1712	RFA	5971
84221-21	06/22/97	1300	ASF		06/23/97	1746	RFA	5971
84221-22	06/22/97	1300	ASF		06/23/97	1820	RFA	5971
84221-23	06/22/97	1300	ASF		06/24/97	1742	TAS	5970
84221-24	06/22/97	1300	ASF		06/24/97	1457	TAS	5970
84221-25	06/22/97	1300	ASF		06/23/97	1639	RFA	5971
84221-26	06/22/97	1300	ASF		06/24/97	1847	TAS	5970
84221-27	06/22/97	1300	ASF		06/24/97	1530	TAS	5970
84221-28	06/22/97	1300	ASF		06/24/97	1815	TAS	5970
84221-3	06/22/97	1300	ASF		06/23/97	1132	RFA	5971
84221-5	06/22/97	1300	ASF		06/23/97	1206	RFA	5971
84221-6	06/22/97	1300	ASF		06/23/97	1240	RFA	5971
84221-11DUP	06/22/97	1300	ASF		06/24/97	1351	TAS	5970
30876BLK	06/22/97	1300	ASF		06/23/97	0948	RFA	5971
30876LCS	06/22/97	1300	ASF		06/23/97	1025	RFA	5971
30876LCSD	06/22/97	1300	ASF		06/23/97	1059	RFA	5971
84221-26D	06/26/97	0900	TAS		06/26/97	1545	TAS	5970

Analytical Services Inc. Batch QC  
For Report Number :84221  
Chlorinated Herbicides

Matrix : TCLP

Batch # 30960

Method : EPA 8150

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
2,4-D	52	55	6	40 - 140	0 - 40
2,4,5-TP (Silvex)	62	70	12	40 - 140	0 - 40
Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
2,4-D	91	87	4	40 - 140	0 - 40
2,4,5-TP (Silvex)	110	107	3	40 - 140	0 - 40

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Chlorinated Herbicides

Matrix : TCLP

Batch # 30960

Method : EPA 8150

## % Recovery Objectives

		18 - 163					
		DCAA					
		S1					
Sample	File	S1	S2	S3	S4	S5	S6
30960BLK	062597045R	84					
30960LCS	062597046F	66					
30960LCSD	062597047R	96					
84273-12MS	062597059F	98					
^^Note: 84273-11MS							
84273-13MSD	062597060F	93					
^^Note: 84273-11MSD							
84221-5	062597047F						
^^Note: RE-EXTRACT NO SURROGATE							
84221-6	062597048F	106					
84273-4	062597049F	97					
84273-5	062597050F	34					
84273-6	062597051F	94					
84273-7	062597052F	103					
84273-8	062597053F	81					
84273-9	062597054F	97					
84273-10	062597055F	114					
84273-11	062597056F	85					
84273-14	062597061F	88					
84273-15	062597062F	113					
84273-16	062597063F	96					
84273-16DUP	062597064F	103					
84221-5RR	070197B004R	107					

Sample Batch Information  
Chlorinated Herbicides Method : EPA 8150

Sample ID	Preparation			Preparation Notes	Analysis			Inst #
	Date	Time	By		Date	Time	By	
84221-5	06/26/97	0745	DY		06/27/97	2031	RAC	GC-1
84221-6	06/26/97	0745	DY		06/27/97	2058	RAC	GC-1
84273-10	06/26/97	0745	DY		06/28/97	1211	RAC	GC-1
84273-11	06/26/97	0745	DY		06/28/97	1239	RAC	GC-1
84273-4	06/26/97	0745	DY		06/27/97	2126	RAC	GC-1
84273-5	06/26/97	0745	DY		06/27/97	2154	RAC	GC-1
84273-6	06/26/97	0745	DY		06/27/97	2222	RAC	GC-1
84273-7	06/26/97	0745	DY		06/28/97	1048	RAC	GC-1
84273-8	06/26/97	0745	DY		06/28/97	1116	RAC	GC-1
84273-9	06/26/97	0745	DY		06/28/97	1143	RAC	GC-1
30960BLK	06/25/97	0930	DY		06/26/97	0351	RAC	GC-1
30960LCS	06/25/97	0930	DY		06/26/97	0446	RAC	GC-1
30960LCSD	06/25/97	0930	DY		06/26/97	0446	RAC	GC-1
84273-12MS	06/26/97	1400	DY	84273-11MS	06/28/97	1403	RAC	GC-1
84273-13MSD	06/26/97	1400	DY	84273-11MSD	06/28/97	1430	RAC	GC-1
84273-14	06/26/97	1400	DY		06/28/97	1458	RAC	GC-1
84273-15	06/26/97	1400	DY		06/28/97	1526	RAC	GC-1
84273-16	06/26/97	1400	DY		06/28/97	1554	RAC	GC-1
84273-16DUP	06/26/97	1400	DY		06/28/97	1622	RAC	GC-1
84221-5RR	07/01/97	0930	DY		07/01/97	1544	RAC	GC-1



Analytical Services Inc. Batch QC  
 For Report Number :84221  
 Volatile Organics

Matrix : Aqueous

Batch # 30976

Method : EPA 8240/8260

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	96	102	6	61 - 145	0 - 14
Trichloroethene	100	106	5	71 - 120	0 - 14
Benzene	106	106	0	76 - 127	0 - 11
Toluene	101	111	9	76 - 125	0 - 13
Chlorobenzene	103	105	2	75 - 130	0 - 13
Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	96	100	4	61 - 145	0 - 14
Trichloroethene	103	101	2	71 - 120	0 - 14
Benzene	105	107	2	76 - 127	0 - 11
Toluene	105	109	4	76 - 125	0 - 13
Chlorobenzene	102	106	3	75 - 130	0 - 13

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Aqueous

Batch # 30976

Method : EPA 8240/8260

## % Recovery Objectives

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S1	1,2-Dichloroethane-d4	76 - 114
S2	Toluene-d8	88 - 110
S3	Ethylbenzene-d10	75 - 115
S4	4-Bromofluorobenzene	86 - 115

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Sample	File	S1	S2	S3	S4	S5	S6
<hr/>							
30976BLK1A	>LR403	85	98	107	100		
84231-6	>LR411	115	91	96	104		
^^Note: RE FOR SURR/MATRIX EFFECT							
84231-7	>LR412	111	94	98	106		
84231-8	>LR413	113	95	100	103		
84231-9	>LR414	106	95	99	101		
30976BLK2A	>RQ687	85	108	101	91		
84221-1	>RQ688	89	108	102	92		
84221-2	>RQ689	88	107	101	89		
84221-8	>RQ690	89	106	101	90		
84221-9	>RQ691	88	108	100	91		
84221-10	>RQ692	91	106	101	89		
84273-1	>RQ693	85	109	102	87		
84273-2	>RQ694	89	105	95	86		
84273-3	>RQ695	89	110	103	91		
84147-1	>LR398	102	93	99	103		
30976BLK1B	>LR435	103	94	102	104		
84231-10	>LR437	79	100	108	100		
84231-11	>LR438	88	95	104	101		
84231-12	>LR439	85	95	104	98		
84231-13	>LR440	82	99	106	96		
84231-14	>LR441	95	94	99	99		
84231-15	>LR442	82	95	104	97		
84231-16	>LR443	99	93	99	102		
30976LCS	>LR449	101	93	100	102		
30976LCSD	>LR450	79	100	108	96		
84231-10MS	>LR451	86	95	102	96		
84231-10MSD	>LR452	84	97	103	96		

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Sample Batch Information  
Volatile Organics Method : EPA 8240/8260

Sample ID	Preparation		Preparation Notes	Analysis			Inst #
	Date	Time By		Date	Time	By	
30976BLK1A	/	/		06/24/97	2308	JKP	VOA1
84231-6	/	/		06/25/97	0955	JKP	VOA1
84231-7	/	/		06/25/97	1029	JKP	VOA1
84231-8	/	/		06/25/97	1104	JKP	VOA1
84231-9	/	/		06/25/97	1214	JKP	VOA1
30976BLK2A	/	/		06/24/97	2348	JKP	VOA2
84221-1	/	/		06/25/97	0021	JKP	VOA2
84221-2	/	/		06/25/97	0055	JKP	VOA2
84221-8	/	/		06/25/97	0129	JKP	VOA2
84221-9	/	/		06/25/97	0202	JKP	VOA2
84221-10	/	/		06/25/97	0236	JKP	VOA2
84273-1	/	/		06/25/97	0309	JKP	VOA2
84273-2	/	/		06/25/97	0343	JKP	VOA2
84273-3	/	/		06/25/97	0417	JKP	VOA2
84147-1	/	/		06/24/97	1811	JKP	VOA1
30976BLK1B	/	/		06/25/97	2143	JKP	VOA1
84231-10	/	/		06/25/97	1147	JKP	VOA1
84231-11	/	/		06/26/97	1222	JKP	VOA1
84231-12	/	/		06/26/97	1256	JKP	VOA1
84231-13	/	/		06/26/97	1330	JKP	VOA1
84231-14	/	/		06/26/97	1404	JKP	VOA1
84231-15	/	/		06/26/97	1438	JKP	VOA1
84231-16	/	/		06/26/97	1513	JKP	VOA1
30976LCS	/	/		06/26/97	1910	JKP	VOA1
30976LCSD	/	/		06/26/97	1944	JKP	VOA1
84231-10MS	/	/		06/26/97	2018	JKP	VOA1
84231-10MSD	/	/		06/26/97	2052	JKP	VOA1

Analytical Services Inc. Batch QC  
 For Report Number :84221  
 Organochlorine Pesticides

Matrix : TCLP

Batch # 30977

Method : EPA 8080

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
BHC-gamma (Lindane)	83	87	5	32 - 127	0 - 40
Heptachlor	84	92	8	34 - 111	0 - 40
Toxaphene	28	26	7	25 - 160	0 - 40
Heptachlor epoxide	87	90	4	25 - 160	0 - 40
Endrin	92	88	4	30 - 147	0 - 40
Chlordane	99	106	6	25 - 160	0 - 40
Methoxychlor	87	84	3	25 - 160	0 - 40

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
BHC-gamma (Lindane)	94	95	1	32 - 127	0 - 40
Heptachlor	101	103	2	34 - 111	0 - 40
Toxaphene	29	33	13	25 - 160	0 - 40
Heptachlor epoxide	99	105	5	25 - 160	0 - 40
Endrin	115	119	3	30 - 147	0 - 40
Chlordane	95	134	34	25 - 160	0 - 40
Methoxychlor	74	93	22	25 - 160	0 - 40

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Organochlorine Pesticides

Matrix : TCLP

Batch # 30977

Method : EPA 8080

## % Recovery Objectives

S1	Dibutylchlorendate	34 - 151
S2	Tetrachloro-m-xylene	40 - 111
S3	Decachlorobiphenyl	24 - 153

Sample	File	S1	S2	S3	S4	S5	S6
30977BLK	062797B023F	94	74	90			
30977LCS	062797B024F	99	66	108			
30977LCSD	062797B025R	99	68	115			
84273-12MS	062797B050F	107	80	101			
^^Note: 84273-11MS							
84273-13MSD	062797B051F	114	81	102			
^^Note: 84273-11MSD							
84273-4	062797B032F	86	69	40			
84273-5	062797B035F	96	71	89			
84273-6	062797B036F	106	72	101			
84273-7	062797B037F	98	70	89			
84273-8	062797B038F	91	61	83			
84273-9	062797B041F	95	70	92			
84273-10DUP	062797B042F	82	51	73			
^^Note: 84273-11DUP							
84273-11	062797B043F	182	163	200			
84273-14	062797B044F	88	76	77			
84273-15	062797B047F	87	78	81			
84273-16	062797B048F	82	71	86			
84221-5	062797B039F	90	64	90			
84221-6	062797B040F	97	71	98			
30977BLKPCB	070197015F		67	87			
^^Note: PCB ONLY							
84273-11RR	070197017RF	91	90	113			

Sample Batch Information  
Organochlorine Pesticides Method : EPA 8080

Sample ID	Preparation			Preparation Notes	Analysis			Inst #
	Date	Time	By		Date	Time	By	
30977BLK	06/26/97	0730	MO/TB		06/27/97	2348	RAC	GC-3
30977LCS	06/26/97	0730	MO/TB		06/28/97	0016	RAC	GC-3
30977LCSD	06/26/97	0730	MO/TB		06/28/97	0016	RAC	GC-3
84273-12MS	06/26/97	0730	MO/TB	84273-11MS	06/28/97	1237	RAC	GC-3
84273-13MSD	06/26/97	0730	MO/TB	84273-11MSD	06/28/97	1306	RAC	GC-3
84273-4	06/26/97	0730	MO/TB		06/28/97	0404	RAC	GC-3
84273-5	06/26/97	0730	MO/TB		06/28/97	0530	RAC	GC-3
84273-6	06/26/97	0730	MO/TB		06/28/97	0558	RAC	GC-3
84273-7	06/26/97	0730	MO/TB		06/28/97	0627	RAC	GC-3
84273-8	06/26/97	0730	MO/TB		06/28/97	0655	RAC	GC-3
84273-9	06/26/97	0730	MO/TB		06/28/97	0821	RAC	GC-3
84273-10DUP	06/26/97	0730	MO/TB	84273-11DUP	06/28/97	0849	RAC	GC-3
84273-11	06/26/97	0730	MO/TB		06/28/97	0918	RAC	GC-3
84273-14	06/26/97	0730	MO/TB		06/28/97	0946	RAC	GC-3
84273-15	06/26/97	0730	MO/TB		06/28/97	1112	RAC	GC-3
84273-16	06/26/97	0730	MO/TB		06/28/97	1140	RAC	GC-3
84221-5	06/26/97	0730	MO/TB		06/28/97	0723	RAC	GC-3
30977BLKPCB	07/01/97	1030	TB		07/01/97	1354	RAC	GC-3
84273-11RR	07/01/97	1030	TB		07/02/97	0205	RAC	GC-3
84221-6	06/26/97	0730	MO/TB		06/28/97	0752	RAC	GC-3

Analytical Services Inc. Batch QC  
For Report Number :84221  
Volatile Organics

Matrix : Soil/Sediment

Batch # 30978

Method : EPA 8240/8260

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	70	67	4	61 - 145	0 - 14
Trichloroethene	80	80	1	71 - 120	0 - 14
Benzene	96	101	5	76 - 127	0 - 11
Toluene	98	98	1	76 - 125	0 - 13
Chlorobenzene	96	96	0	75 - 130	0 - 13

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	74	80	7	61 - 145	0 - 14
Trichloroethene	73	76	4	71 - 120	0 - 14
Benzene	107	112	5	76 - 127	0 - 11
Toluene	109	111	2	76 - 125	0 - 13
Chlorobenzene	99	102	3	75 - 130	0 - 13

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Soil/Sediment Batch # 30978

Method : EPA 8240/8260

## % Recovery Objectives

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S1	1,2-Dichloroethane-d4	70 - 121
S2	Toluene-d8	81 - 117
S3	Ethylbenzene-d10	79 - 115
S4	4-Bromofluorobenzene	74 - 121

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Sample	File	S1	S2	S3	S4	S5	S6
<hr/>							
30978BLK2A	>RQ698	84	100	96	80		
30978LCS	>RQ699	83	101	97	79		
30978LCSD	>RQ700	84	102	98	79		
84221-3	>RQ701	92	132	113	64		
^^Note: MATRIX EFFECT							
84221-5	>RQ702	86	120	105	65		
^^Note: MATRIX EFFECT							
84221-6	>RQ703	16	141	195	85		
84221-12	>RQ705	95	111	101	65		
^^Note: RE FOR SURR							
84221-13	>RQ706	94	112	96	74		
84221-14	>RQ707	91	115	102	69		
84221-15	>RQ708	93	119	105	70		
84221-16	>RQ709	90	106	99	75		
84221-16MS	>RQ710	90	105	99	77		
^^Note: 84221-17							
84221-16MSD	>RQ746	88	105	99	77		
^^Note: 84221-18							
30978BLK2B	>RQ719	93	104	98	90		
84221-19	>RQ721	53	948	121	73		
84221-20	>RQ722	89	106	101	86		
84221-21	>RQ723	86	111	99	84		
84221-22	>RQ724	94	111	103	77		
84221-23	>RQ725	80	115	102	69		
84221-24	>RQ726	83	112	101	83		
84221-25	>RQ727	87	103	102	81		
84221-26	>RQ728	86	116	103	78		
84221-27	>RQ729	94	123	106	71		
84221-28	>RQ730	90	110	97	79		
84273-4	>RQ733	99	118	113	67		
84273-5	>RQ734	86	122	107	66		
^^Note: MATRIX EFFECT							

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Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Soil/Sediment      Batch # 30978      Method : EPA 8240/8260

% Recovery Objectives

S1	1,2-Dichloroethane-d4	70 - 121
S2	Toluene-d8	81 - 117
S3	Ethylbenzene-d10	79 - 115
S4	4-Bromofluorobenzene	74 - 121

Sample	File	S1	S2	S3	S4	S5	S6
84221-3DUP	>RQ792	94	129	114	69		
^^Note: MATRIX EFFECT							
84221-5DUP	>RQ792	83	120	105	73		
^^Note: MATRIX EFFECT							
30978BLK2C	>RQ781	80	100	96	91		

Sample Batch Information  
Volatile Organics Method : EPA 8240/8260

Sample ID	Preparation		Preparation Notes	Analysis			Inst #
	Date	Time By		Date	Time By		
30978BLK2A	/	/		06/25/97	0640 JKP	VOA2	
30978LCS	/	/		06/25/97	0713 JKP	VOA2	
30978LCSD	/	/		06/25/97	0747 JKP	VOA2	
84221-3	/	/		06/25/97	0820 JKP	VOA2	
84221-5	/	/		06/25/97	0854 JKP	VOA2	
84221-6	/	/		06/25/97	0935 JKP	VOA2	
84221-12	/	/		06/25/97	1042 JKP	VOA2	
84221-13	/	/		06/25/97	1116 JKP	VOA2	
84221-14	/	/		06/25/97	1150 JKP	VOA2	
84221-15	/	/		06/25/97	1223 JKP	VOA2	
84221-16	/	/		06/25/97	1257 JKP	VOA2	
84221-16MS	/	/		06/25/97	1330 JKP	VOA2	
84221-16MSD	/	/		06/27/97	0240 JKP	VOA2	
30978BLK2B	/	/		06/26/97	1017 JKP	VOA2	
84221-19	/	/		06/25/97	1221 JKP	VOA2	
84221-20	/	/		06/25/97	1255 JKP	VOA2	
84221-21	/	/		06/25/97	1328 JKP	VOA2	
84221-22	/	/		06/25/97	1402 JKP	VOA2	
84221-23	/	/		06/25/97	1435 JKP	VOA2	
84221-24	/	/		06/25/97	1509 JKP	VOA2	
84221-25	/	/		06/26/97	1543 JKP	VOA2	
84221-26	/	/		06/26/97	1616 JKP	VOA2	
84221-27	/	/		06/26/97	1650 JKP	VOA2	
84221-28	/	/		06/26/97	1723 JKP	VOA2	
84273-4	/	/		06/26/97	1925 JKP	VOA2	
84273-5	/	/		06/26/97	1958 JKP	VOA2	
84221-3DUP	/	/		06/28/97	2205 JKP	VOA2	
84221-5DUP	/	/		06/28/97	2240 JKP	VOA2	
30978BLK2C	/	/		06/28/97	1608 JKP	VOA2	

Analytical Services Inc. Batch QC  
 For Report Number :84221  
 Base Neutrals / Acids

Matrix : TCLP

Batch # 30979

Method : EPA 8270

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
o-Cresol	49	57	14	10 - 150	0 - 50
m-Cresol + p-Cresol	47	54	13	10 - 150	0 - 50
1,4-Dichlorobenzene	37	43	16	36 - 97	0 - 28
2,4-Dinitrotoluene	46	52	13	24 - 96	0 - 38
Hexachlorobenzene	66	79	18	10 - 152	0 - 40
Hexachlorobutadiene	33	41	20	24 - 116	0 - 40
Hexachloroethane	47	45	5	40 - 113	0 - 40
Nitrobenzene	52	60	14	35 - 180	0 - 40
Pentachlorophenol	52	65	23	9 - 103	0 - 50
Pyridine	22	30	33	10 - 110	0 - 90
2,4,5-Trichlorophenol	62	71	13	10 - 150	0 - 50
2,4,6-Trichlorophenol	55	64	15	37 - 144	0 - 40
^^Note : BATCH PASSES ON LCS/LCSD DATA					

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
o-Cresol	0	0	NC	10 - 150	0 - 50
m-Cresol + p-Cresol	0	0	NC	10 - 150	0 - 50
1,4-Dichlorobenzene	58	56	3	36 - 97	0 - 28
2,4-Dinitrotoluene	91	85	6	24 - 96	0 - 38
Hexachlorobenzene	84	92	9	10 - 152	0 - 40
Hexachlorobutadiene	55	62	12	24 - 116	0 - 40
Hexachloroethane	54	53	3	40 - 113	0 - 40
Nitrobenzene	77	80	4	35 - 180	0 - 40
Pentachlorophenol	13	20	44	9 - 103	0 - 50
Pyridine	31	21	35	10 - 110	0 - 90
2,4,5-Trichlorophenol	9	14	39	10 - 150	0 - 50
2,4,6-Trichlorophenol	0	0	NC	37 - 144	0 - 40
^^Note : BATCH PASSES ON LCS/LCSD DATA					

NC = Not Calculated

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Base Neutrals / Acids

Matrix : TCLP

Batch # 30979

Method : EPA 8270

## % Recovery Objectives

S1	2-Fluorophenol	21 - 100
S2	Phenol-d5	10 - 94
S3	Nitrobenzene-d5	35 - 114
S4	2-Fluorobiphenyl	43 - 116
S5	2,4,6-Tribromophenol	10 - 123
S6	Terphenyl-d14	33 - 141,

Sample	File	S1	S2	S3	S4	S5	S6
30979BLK	B8932	48	30	79	79	80	81
30979LCS	B8935	33	22	52	58	61	54
30979LCSD	B8935	37	24	59	64	71	63
84221-5	B8967	2	1	77	81	3	47
84221-6	B8968			70	75	2	46
84273-4	B8961	8	1	73	73	4	31
84273-5	B8962	17	7	60	61	42	45
84273-6	B8963	1		83	83	6	33
84273-7	B8964	1		77	84	5	43
84273-8	B8965	8	4	63	73	25	36
84273-9	B8966	5	2	65	70	32	31
84273-10	B8940			74	80	2	47
84273-11	B8941	1		42	52	3	55
84273-12MS	B8969	1		77	79	5	60
^^Note: 84273-11MS							
84273-13MSD	B8970	2	1	81	80	17	78
^^Note: 84273-11MSD							
84273-14	B8942	29	21	60	69	71	67
84273-15	B8943	36	22	67	75	73	67
84273-16	B8944	23	19	59	72	58	68
84221-5RR	B8990			59	64	2	38
84221-6RR	B8991	2	1	53	57	4	32
84273-4RR	B8992			65	71	2	39
84273-5RR	B8993	10	5	54	61	35	49
84273-6RR	B8994			34	36	1	23
84273-7RR	B8995	1		63	70	5	53
84273-8RR	B8996	1		11	12	5	7
84273-9RR	B8997	1		53	59	3	37
84273-10RR	B8998	1		46	48	3	31
84273-11RR	B9019	1		47	51	5	42
84273-12MSRR	B8999	1		53	58	4	44
^^Note: 84273-11MS							

Analytical Services Inc. Batch QC  
Surrogate Recovery  
Base Neutrals / Acids  
Batch # 30979

Matrix : TCLP

Method : EPA 8270

## % Recovery Objectives

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S1	2-Fluorophenol	21 - 100
S2	Phenol-d5	10 - 94
S3	Nitrobenzene-d5	35 - 114
S4	2-Fluorobiphenyl	43 - 116
S5	2,4,6-Tribromophenol	10 - 123
S6	Terphenyl-d14	33 - 141.

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Sample	File	S1	S2	S3	S4	S5	S6
84273-13MSDRR	B9000	5	4	62	67	14	51
^^Note: 84273-11MSD							

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Sample Batch Information  
Base Neutrals / Acids      Method : EPA 8270

Sample ID	Preparation			Preparation Notes	Analysis			Inst #
	Date	Time	By		Date	Time	By	
30979BLK	06/26/97	1030	JLC		06/27/97	1322	RFA	5971
30979LCS	06/26/97	1030	JLC		06/27/97	1509	RFA	5971
30979LCSD	06/26/97	1030	JLC		06/27/97	1545	RFA	5971
84221-5	06/26/97	1030	JLC		06/28/97	2032	RFA	5971
84221-6	06/26/97	1030	JLC		06/28/97	2107	RFA	5971
84273-10	06/26/97	1030	JLC		06/27/97	1606	RFA	5971
84273-11	06/26/97	1030	JLC		06/27/97	1842	RFA	5971
84273-14	06/26/97	1030	JLC		06/27/97	1918	RFA	5971
84273-15	06/26/97	1030	JLC		06/27/97	1954	RFA	5971
84273-16	06/26/97	1030	JLC		06/27/97	2029	RFA	5971
84273-4	06/27/97	1000	JLC		06/28/97	1658	RFA	5971
84273-5	06/27/97	1000	JLC		06/28/97	1734	RFA	5971
84273-6	06/27/97	1000	JLC		06/28/97	1810	RFA	5971
84273-7	06/27/97	1000	JLC		06/28/97	1845	RFA	5971
84273-8	06/27/97	1000	JLC		06/28/97	1921	RFA	5971
84273-9	06/27/97	1000	JLC		06/28/97	1956	RFA	5971
84273-10RR	06/29/97	1600	LNI		06/30/97	0425	DMB	5971
84221-5RR	06/29/97	1600	LNI		06/29/97	1143	RFA	5971
84221-6RR	06/29/97	1600	LNI		06/30/97	1218	DMB	5971
84273-11RR	06/29/97	1600	LNI		06/30/97	1829	DMB	5971
84273-4RR	06/29/97	1600	LNI		06/30/97	1254	DMB	5971
84273-5RR	06/29/97	1600	LNI		06/30/97	1329	DMB	5971
84273-6RR	06/29/97	1600	LNI		06/30/97	0204	DMB	5971
84273-7RR	06/29/97	1600	LNI		06/30/97	0239	DMB	5971
84273-8RR	06/29/97	1600	LNI		06/30/97	0314	DMB	5971
84273-9RR	06/29/97	1600	LNI		06/30/97	0350	DMB	5971
84273-12MSRR	06/29/97	1600	LNI	84273-11MS	06/30/97	0500	DMB	5971
84273-13MSDRR	06/29/97	1600	LNI	84273-11MSD	06/30/97	0535	DMB	5971
84273-12MS	06/27/97	1000	JLC	84273-11MS	06/28/97	2143	RFA	5971
84273-13MSD	06/27/97	1000	JLC	84273-11MSD	06/28/97	1018	RFA	5971

Analytical Services Inc. Batch QC  
 For Report Number :84221  
 Volatile Organics

Matrix : Soil/Sediment

Batch # 31017

Method : EPA 8240/8260

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	97	99	2	61 - 145	0 - 14
Trichloroethene	98	100	1	71 - 120	0 - 14
Benzene	126	127	0	76 - 127	0 - 11
Toluene	118	118	0	76 - 125	0 - 13
Chlorobenzene	113	113	0	75 - 130	0 - 13

^^Note : BATCH PASSES ON LCS/LCSD DATA

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	95	116	19	61 - 145	0 - 14
Trichloroethene	92	90	2	71 - 120	0 - 14
Benzene	122	130	6	76 - 127	0 - 11
Toluene	127	152	18	76 - 125	0 - 13
Chlorobenzene	110	114	3	75 - 130	0 - 13

^Note : BATCH PASSES ON LCS/LCSD DATA

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics  
 Matrix : Soil/Sediment Batch # 31017 Method : EPA 8240/8260

## % Recovery Objectives

S1	1,2-Dichloroethane-d4	70 - 121
S2	Toluene-d8	81 - 117
S3	Ethylbenzene-d10	79 - 115
S4	4-Bromofluorobenzene	74 - 121

Sample	File	S1	S2	S3	S4	S5	S6
31017BLK2A	>RQ719	93	104	98	90		
84273-7	>RQ736	73	123	107	66		
84273-8	>RQ737	79	114	104	76		
84273-9	>RQ738	81	106	100	76		
84273-10	>RQ739	77	123	106	65		
31017BLK2B	>RQ781	80	100	96	91		
84221-6RA	>RQ794	91	129	114	72		
^^Note: RA FOR SURR/MATRIX EFFECT							
84221-11RA	>RQ795	97	104	97	78		
^^Note: RA DUE TO NO USABLE DATA							
84221-12RA	>RQ796	85	101	102	78		
^^Note: RA FOR SURR							
84221-14RA	>RQ797	91	113	104	80		
^^Note: RA FOR SURR							
84221-15RA	>RQ798	92	107	101	83		
^^Note: RA FOR SURR							
84221-19RA	>RQ799	86	112	97	79		
^^Note: RA FOR SURR							
84221-23RA	>RQ800	88	107	102	86		
^^Note: RA FOR SURR							
84273-5RA	>RQ801	85	131	112	72		
^^Note: RA FOR SURR/MATRIX EFFECT							
84221-27RA	>RQ802	87	117	102	77		
^^Note: RA FOR SURR							
84273-6RA	>RQ803	85	129	107	72		
^^Note: RA DUE TO NO USABLE DATA/MATRX							
31017LCS	>RQ825	84	96	95	91		



Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Soil/Sediment Batch # 31017

Method : EPA 8240/8260

% Recovery Objectives

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S1	1,2-Dichloroethane-d4	70 - 121
S2	Toluene-d8	81 - 117
S3	Ethylbenzene-d10	79 - 115
S4	4-Bromofluorobenzene	74 - 121

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Sample	File	S1	S2	S3	S4	S5	S6
<hr/>							
31017LCSD	>RQ826	83	95	94	88		
31017BLK2C	>RQ806	76	100	99	90		
84273-17	>LR536	113	100	98	98		
84273-11	>RQ824	73	105	98	83		
84273-11MS	>RQ808	74	106	95	80		
^^Note: 84273-12							
84273-14	>RQ810	74	107	94	79		
84273-15	>RQ811	73	117	98	69		
84273-4RA	>RQ812	97	114	112	71		
^^Note: RA FOR SURR/MATRIX EFFECT							
84273-11MSD	>RQ809	88	116	92	76		
^^Note: 84273-13							
84273-7DUP	>RQ813	80	122	108	74		
^^Note: MATRIX EFFECT							
84273-10DUP	>RQ814	79	115	103	73		
^^Note: MATRIX EFFECT							
31017BLK1A	>LR521	102	93	102	104		
31017BLK1B	>LR542	93	100	105	103		
84273-15DUP	>LR567	120	115	101	88		

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Sample Batch Information  
Volatile Organics Method : EPA 8240/8260

Sample ID	Preparation		Preparation Notes	Analysis			Inst #
	Date	Time By		Date	Time By		
31017BLK2A	/	/		06/25/97	1017	JKP	VOA2
84273-7	/	/		06/26/97	2105	JKP	VOA2
84273-8	/	/		06/26/97	2139	JKP	VOA2
84273-9	/	/		06/26/97	2212	JKP	VOA2
84273-10	/	/		06/26/97	2246	JKP	VOA2
31017BLK2B	/	/		06/28/97	1608	JKP	VOA2
84221-6RA	/	/		06/28/97	2314	JKP	VOA2
84221-11RA	/	/		06/28/97	2349	JKP	VOA2
84221-12RA	/	/		06/29/97	0023	JKP	VOA2
84221-14RA	/	/		06/29/97	0057	JKP	VOA2
84221-15RA	/	/		06/29/97	0132	JKP	VOA2
84221-19RA	/	/		06/29/97	0207	JKP	VOA2
84221-23RA	/	/		06/29/97	0241	JKP	VOA2
84273-5RA	/	/		06/29/97	0316	JKP	VOA2
84221-27RA	/	/		06/29/97	0351	JKP	VOA2
84273-6RA	/	/		06/29/97	0425	JKP	VOA2
31017LCS	/	/		06/30/97	0852	JKP	VOA2
31017LCSD	/	/		06/30/97	0926	JKP	VOA2
31017BLK2C	/	/		06/29/97	2011	JKP	VOA2
84273-11MS	/	/		06/29/97	2325	JKP	VOA2
84273-4RA	/	/		06/30/97	0201	JKP	VOA2
84273-11MSD	/	/		06/30/97	0127	JKP	VOA2
84273-7DUP	/	/		06/30/97	0235	JKP	VOA2
84273-10DUP	/	/		06/30/97	0310	JKP	VOA2
84273-17	/	/		06/30/97	0615	JKP	VOA1
84273-11	/	/		06/29/97	2248	JKP	VOA2
84273-14	/	/		06/30/97	0006	JKP	VOA2
84273-15	/	/		06/30/97	0042	JKP	VOA2
31017BLK1A	/	/		06/29/97	2033	JKP	VOA1
31017BLK1B	/	/		06/30/97	0955	JKP	VOA1
84273-15DUP	/	/		06/30/97	2316	JKP	VOA1

Analytical Services Inc. Batch QC  
 For Report Number :84221  
 Volatile Organics

Matrix : TCLP

Batch # 31041

Method : EPA 8240/8260

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
Benzene	96	97	1	90 - 115	0 - 13
Carbon tetrachloride	111	109	1	55 - 115	0 - 15
Chlorobenzene	104	105	1	87 - 109	0 - 10
Chloroform	94	97	3	55 - 115	0 - 15
1,2-Dichloroethane	86	92	7	90 - 115	0 - 13
1,1-Dichloroethene	104	102	2	55 - 111	0 - 15
MEK (2-Butanone)	99	89	11	55 - 115	0 - 15
Tetrachloroethene	112	114	1	55 - 115	0 - 15
Trichloroethene	105	105	0	78 - 110	0 - 11
Vinyl chloride	97	95	2	55 - 115	0 - 15

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
Benzene	106	108	2	90 - 115	0 - 13
Carbon tetrachloride	95	108	12	55 - 115	0 - 15
Chlorobenzene	107	106	0	87 - 109	0 - 10
Chloroform	130	127	2	55 - 115	0 - 15
1,2-Dichloroethane	129	130	1	90 - 115	0 - 13
1,1-Dichloroethene	102	111	8	55 - 111	0 - 15
MEK (2-Butanone)	157	154	1	55 - 115	0 - 15
Tetrachloroethene	90	98	8	55 - 115	0 - 15
Trichloroethene	106	110	3	78 - 110	0 - 11
Vinyl chloride	80	91	13	55 - 115	0 - 15

## Analytical Services Inc. Batch QC

Surrogate Recovery

Volatile Organics

Matrix : TCLP

Batch # 31041

Method : EPA 8240/8260

## % Recovery Objectives

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S1	1,2-Dichloroethane-d4	76 - 114
S2	Toluene-d8	88 - 110
S3	Ethylbenzene-d10	75 - 115
S4	4-Bromofluorobenzene	86 - 115

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Sample	File	S1	S2	S3	S4	S5	S6
<hr/>							
31041BLK1A	>LR496	92	98	105	105		
31041LCS	>LR558	85	104	114	105		
31041LCSD	>LR559	93	104	113	111		
84273-4	>LR507	94	98	102	104		
84273-5	>LR508	94	98	104	104		
84273-6	>LR509	91	99	103	106		
84273-7	>LR510	100	96	102	107		
84273-8	>LR511	87	97	105	103		
84273-9	>LR512	110	94	100	108		
84273-11	>LR513	112	93	98	112		
84273-11MS	>LR515	117	94	101	109		
^^Note: 84273-12							
84273-11MSD	>LR516	118	95	100	109		
^^Note: 84273-13							
84273-14	>LR517	118	98	104	110		
84273-15	>LR518	130	91	95	114		
^^Note: RE FOR SURR/MATRIX EFFECT							
31041BLK1B	>LR521	102	93	102	104		
84221-5	>LR529	85	97	106	101		
84221-6	>LR530	105	94	100	104		
84273-10	>LR531	102	94	102	105		
84273-16	>LR532	98	94	101	105		
31041BLK	>LR533	106	94	101	107		
84273-14RA	>LR534	111	93	101	109		
^^Note: RA FOR SURR							
84273-15RA	>LR535	117	90	97	108		
^^Note: RA FOR SURR/MATRIX EFFECT							
31041BLK1C	>LR616	86	92	89	96		
84424-1	>LR618	92	93	87	97		
31041BLK2A	>RM097	109	98	102	92		
84537-5	>RM097	102	98	102	94		
31041BLK1D	>LR943	102	102	94	99		

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Analytical Services Inc. Batch QC  
Surrogate Recovery  
Volatile Organics

Matrix : TCLP

Batch # 31041

Method : EPA 8240/8260

## % Recovery Objectives

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S1	1,2-Dichloroethane-d4	76 - 114
S2	Toluene-d8	88 - 110
S3	Ethylbenzene-d10	75 - 115
S4	4-Bromofluorobenzene	86 - 115

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Sample	File	S1	S2	S3	S4	S5	S6
84684	>LR968	91	106	95	94		
84710	>LR969	80	108	98	91		
84710DUP	>LB086	80	109	103	103		
84899	>RM419	97	101	95	88		

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Sample Batch Information  
Volatile Organics Method : EPA 8240/8260

Sample ID	Preparation		Preparation Notes	Analysis			Inst #
	Date	Time By		Date	Time By		
31041BLK1A	/	/		06/28/97	1531 JKP	VOA1	
31041LCS	/	/		06/30/97	1511 JKP	VOA1	
31041LCSD	/	/		06/30/97	1546 JKP	VOA1	
84273-4	/	/		06/28/97	2206 JKP	VOA1	
84273-5	/	/		06/28/97	2240 JKP	VOA1	
84273-6	/	/		06/28/97	2315 JKP	VOA1	
84273-7	/	/		06/28/97	2350 JKP	VOA1	
84273-8	/	/		06/29/97	0025 JKP	VOA1	
84273-9	/	/		06/29/97	0100 JKP	VOA1	
84273-11	/	/		06/29/97	0135 JKP	VOA1	
84273-11MS	/	/		06/29/97	0245 JKP	VOA1	
84273-11MSD	/	/		06/29/97	0320 JKP	VOA1	
84273-14	/	/		06/29/97	0355 JKP	VOA1	
84273-15	/	/		06/29/97	0430 JKP	VOA1	
31041BLK1B	/	/		06/29/97	2033 JKP	VOA1	
84221-5	/	/		06/30/97	0211 JKP	VOA1	
84221-6	/	/		06/30/97	0245 JKP	VOA1	
84273-10	/	/		06/30/97	0320 JKP	VOA1	
84273-16	/	/		06/30/97	0355 JKP	VOA1	
31041BLK	/	/		06/30/97	0430 JKP	VOA1	
84273-14RA	/	/		06/30/97	0505 JKP	VOA1	
84273-15RA	/	/		06/30/97	0540 JKP	VOA1	
31041BLK1C	/	/		07/02/97	1031 JKP	VOA1	
84424-1	/	/		07/02/97	1141 JKP	VOA1	
31041BLK2A	/	/		07/08/97	1334 JKP	VOA2	
84537-5	/	/		07/08/97	1408 JKP	VOA2	
31041BLK1D	/	/		07/14/97	1036 JKP	VOA1	
84684	/	/		07/15/97	0241 JKP	VOA1	
84710	/	/		07/15/97	0316 JKP	VOA1	
84710DUP	/	/		07/18/97	0439 JKP	VOA1	
84899	/	/		07/18/97	1543 JKP	VOA2	

Analytical Services Inc. Batch QC  
For Report Number :84221

Batch General Information					
Batch Number	Analyte	Analysis Method	Matrix	Blank Result	Prep. Method
30353	Hg	EPA 7470	Aqueous <	0.0002	
30354	Hg	EPA 7471	Soil <	0.0002	
30355	Hg	EPA 7471	Soil <	0.0002	
30509	Ag	EPA 6010	Aqueous <	0.0050	
30509	Ba	EPA 6010	Aqueous <	0.0100	
30509	Be	EPA 6010	Aqueous <	0.0030	
30509	Cd	EPA 6010	Aqueous <	0.0050	
30509	Cr	EPA 6010	Aqueous <	0.0050	
30509	Cu	EPA 6010	Aqueous <	0.0200	
30509	Ni	EPA 6010	Aqueous <	0.0100	
30509	Pb	EPA 6010	Aqueous <	0.0050	
30509	Sb	EPA 6010	Aqueous <	0.0060	
30509	Zn	EPA 6010	Aqueous <	0.0100	
^^Note : BATCH PASSES ON LCS/LCSD/MS/MSD DATA					
30511	Se	EPA 7740	Soil <	0.0100	
30511	As	EPA 7060	Soil <	0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
30511	Tl	EPA 7841	Soil <	0.0100	
^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
30512	Tl	EPA 7841	Soil <	0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
30512	Se	EPA 7740	Soil <	0.0100	
30512	As	EPA 7060	Soil <	0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
30514	Tl	EPA 7841	Aqueous <	0.0050	
30514	Se	EPA 7740	Aqueous <	0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
30514	As	EPA 7060	Aqueous <	0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
30528	Ag	EPA 6010	Soil <	0.0100	
30528	Ba	EPA 6010	Soil <	0.0100	
30528	Be	EPA 6010	Soil <	0.0050	
30528	Cd	EPA 6010	Soil <	0.0050	
30528	Cr	EPA 6010	Soil <	0.0100	
^^Note : MS RPD>20%, QC PASSES ON LCS,LCSD,MS,MSD					
30528	Cu	EPA 6010	Soil <	0.0200	
30528	Ni	EPA 6010	Soil <	0.0200	
30528	Pb	EPA 6010	Soil <	0.0250	
30528	Sb	EPA 6010	Soil <	0.0500	
^^Note : QC PASSES ON LCS,LCSD,PDS					

Analytical Services Inc. Batch QC  
For Report Number :84221

## QC Batch General Information

Batch Number	Analyte	Analysis Method	Matrix	Blank Result	Prep. Method
30528	Zn	EPA 6010	Soil	< 0.0200	
^^Note : MS RPD>20%, QC PASSES ON RECOVERIES					
30529	Ag	EPA 6010	Soil	< 0.0050	
30529	Ba	EPA 6010	Soil	< 0.0100	
30529	Be	EPA 6010	Soil	< 0.0050	
30529	Cd	EPA 6010	Soil	< 0.0050	
30529	Cr	EPA 6010	Soil	< 0.0100	
30529	Cu	EPA 6010	Soil	< 0.0200	
30529	Ni	EPA 6010	Soil	< 0.0200	
30529	Pb	EPA 6010	Soil	< 0.0100	
30529	Sb	EPA 6010	Soil	< 0.0500	
30529	Zn	EPA 6010	Soil	< 0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
30879	%Moist	ASTM D 2216	Soil	0.0000	
31061	CN	EPA 9010	Aq/Solid	< 0.0200	
31062	CN	EPA 9010	Aq/Solid	< 0.0200	
31065	CN	EPA 9010	Aq/Solid	< 0.0200	

## Lab Control Information

Batch Number	Analyte	Method	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
30353	Hg	EPA 7470	96	95	1	76 - 124	0 - 20
30354	Hg	EPA 7471	92	95	3	76 - 124	0 - 30
30355	Hg	EPA 7471	86	89	3	76 - 124	0 - 30
30509	Ag	EPA 6010	95	98	3	76 - 124	0 - 20
30509	Ba	EPA 6010	92	96	4	76 - 124	0 - 20
30509	Be	EPA 6010	91	96	5	76 - 124	0 - 20
30509	Cd	EPA 6010	89	94	5	76 - 124	0 - 20
30509	Cr	EPA 6010	85	90	6	76 - 124	0 - 20
30509	Cu	EPA 6010	92	96	4	76 - 124	0 - 20
30509	Ni	EPA 6010	93	99	6	76 - 124	0 - 20
30509	Pb	EPA 6010	89	95	7	76 - 124	0 - 20
30509	Sb	EPA 6010	95	100	5	76 - 124	0 - 20
30509	Zn	EPA 6010	87	93	7	76 - 124	0 - 20
30511	Se	EPA 7740	104	103	1	76 - 124	0 - 30
30511	As	EPA 7060	90	90	0	76 - 124	0 - 30
30511	Tl	EPA 7841	90	89	1	76 - 124	0 - 30
30512	Tl	EPA 7841	78	84	7	76 - 124	0 - 30
30512	Se	EPA 7740	108	109	1	76 - 124	0 - 30
30512	As	EPA 7060	88	88	0	76 - 124	0 - 30
30514	Tl	EPA 7841	111	120	8	76 - 124	0 - 2
30514	Se	EPA 7740	104	108	4	76 - 124	0 - 20



Analytical Services Inc. Batch QC  
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Control Information			LC		LC RPD	%Recovery Range	RPD Range
Batch Number	Analyte	Method	%Rec	%Rec			
30514	As	EPA 7060	91	86	6	76 - 124	0 - 20
30528	Ag	EPA 6010	94	95	1	76 - 124	0 - 30
30528	Ba	EPA 6010	92	92	0	76 - 124	0 - 30
30528	Be	EPA 6010	90	90	0	76 - 124	0 - 30
30528	Cd	EPA 6010	89	89	0	76 - 124	0 - 30
30528	Cr	EPA 6010	90	90	0	76 - 124	0 - 30
30528	Cu	EPA 6010	92	92	0	76 - 124	0 - 30
30528	Ni	EPA 6010	89	89	0	76 - 124	0 - 30
30528	Pb	EPA 6010	89	90	1	76 - 124	0 - 30
30528	Sb	EPA 6010	90	90	0	76 - 124	0 - 30
30528	Zn	EPA 6010	89	89	0	76 - 124	0 - 30
30529	Ag	EPA 6010	89	87	2	76 - 124	0 - 30
30529	Ba	EPA 6010	91	89	2	76 - 124	0 - 30
30529	Be	EPA 6010	87	85	2	76 - 124	0 - 30
30529	Cd	EPA 6010	85	82	4	76 - 124	0 - 30
30529	Cr	EPA 6010	84	82	2	76 - 124	0 - 30
30529	Cu	EPA 6010	88	85	3	76 - 124	0 - 30
30529	Ni	EPA 6010	87	85	2	76 - 124	0 - 30
30529	Pb	EPA 6010	87	85	2	76 - 124	0 - 30
30529	Sb	EPA 6010	88	86	2	76 - 124	0 - 30
30529	Zn	EPA 6010	81	76	6	76 - 124	0 - 30
31051	CN	EPA 9010	86	87	1	85 - 115	0 - 30
31062	CN	EPA 9010	87	90	3	85 - 115	0 - 30
31065	CN	EPA 9010	87	87	0	85 - 115	0 - 30

Analytical Services Inc. Batch QC  
For Report Number :84221

## Matrix Spike Information

Batch Number	Analyte	Method	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
30353	Hg	EPA 7470	101	101	0	76 - 124	0 - 20
30354	Hg	EPA 7471	89	100	12	76 - 124	0 - 30
30355	Hg	EPA 7471	97	113	15	76 - 124	0 - 30
30509	Ag	EPA 6010	98	96	2	76 - 124	0 - 20
30509	Ba	EPA 6010	95	93	2	76 - 124	0 - 20
30509	Be	EPA 6010	93	92	1	76 - 124	0 - 20
30509	Cd	EPA 6010	91	90	1	76 - 124	0 - 20
30509	Cr	EPA 6010	88	86	2	76 - 124	0 - 20
30509	Cu	EPA 6010	98	95	3	76 - 124	0 - 20
30509	Ni	EPA 6010	96	95	1	76 - 124	0 - 20
30509	Pb	EPA 6010	93	92	1	76 - 124	0 - 20
30509	Sb	EPA 6010	100	98	2	76 - 124	0 - 20
30509	Zn	EPA 6010	85	85	0	76 - 124	0 - 20
30511	Se	EPA 7740	88	84	5	76 - 124	0 - 30
30511	As	EPA 7060	60	61	2	76 - 124	0 - 30
30511	Tl	EPA 7841	66	69	4	76 - 124	0 - 30
30512	Tl	EPA 7841	75	75	0	76 - 124	0 - 30
30512	Se	EPA 7740	107	106	1	76 - 124	0 - 30
30512	As	EPA 7060	69	69	0	76 - 124	0 - 30
30514	Tl	EPA 7841	85	86	1	76 - 124	0 - 20
30514	Se	EPA 7740	74	73	1	76 - 124	0 - 20
30514	As	EPA 7060	72	69	4	76 - 124	0 - 20
30528	Ag	EPA 6010	90	92	2	76 - 124	0 - 30
30528	Ba	EPA 6010	85	86	1	76 - 124	0 - 30
30528	Be	EPA 6010	84	85	1	76 - 124	0 - 30
30528	Cd	EPA 6010	81	82	1	76 - 124	0 - 30
30528	Cr	EPA 6010	120	84	35	76 - 124	0 - 30
30528	Cu	EPA 6010	90	92	2	76 - 124	0 - 30
30528	Ni	EPA 6010	84	85	1	76 - 124	0 - 30
30528	Pb	EPA 6010	85	82	4	76 - 124	0 - 30
30528	Sb	EPA 6010	52	47	10	76 - 124	0 - 30
30528	Zn	EPA 6010	87	110	23	76 - 124	0 - 30
30529	Ag	EPA 6010	88	87	1	76 - 124	0 - 30
30529	Ba	EPA 6010	90	89	1	76 - 124	0 - 30
30529	Be	EPA 6010	87	85	2	76 - 124	0 - 30
30529	Cd	EPA 6010	82	78	5	76 - 124	0 - 30
30529	Cr	EPA 6010	82	85	4	76 - 124	0 - 30
30529	Cu	EPA 6010	88	86	2	76 - 124	0 - 30
30529	Ni	EPA 6010	85	81	5	76 - 124	0 - 30
30529	Pb	EPA 6010	84	82	2	76 - 124	0 - 30
30529	Sb	EPA 6010	85	83	2	76 - 124	0 - 30
30529	Zn	EPA 6010	70	66	6	76 - 124	0 - 30
31061	CN	EPA 9010	889	806	10	75 - 125	0 - 30
31062	CN	EPA 9010	***	***	0	75 - 125	0 - 30
31065	CN	EPA 9010	95	89	7	75 - 125	0 - 30

Analytical Services Inc. Batch QC  
For Report Number :84221

Hot Digestion Spike Information				
Batch Number	Analyte	Method	PDS %Rec	%Recovery Range
30509	Ag	EPA 6010	93	76 - 124
30509	Ba	EPA 6010	92	76 - 124
30509	Be	EPA 6010	93	76 - 124
30509	Cd	EPA 6010	92	76 - 124
30509	Cr	EPA 6010	86	76 - 124
30509	Cu	EPA 6010	92	76 - 124
30509	Ni	EPA 6010	96	76 - 124
30509	Pb	EPA 6010	92	76 - 124
30509	Sb	EPA 6010	92	76 - 124
30509	Zn	EPA 6010	74	76 - 124
30511	Se	EPA 7740	122	76 - 124
30511	As	EPA 7060	81	76 - 124
30511	Tl	EPA 7841	73	76 - 124
30512	Tl	EPA 7841	60	76 - 124
30512	Se	EPA 7740	94	76 - 124
30512	As	EPA 7060	60	76 - 124
30514	Tl	EPA 7841	87	76 - 124
30514	Se	EPA 7740	83	76 - 124
30514	As	EPA 7060	75	76 - 124
30528	Ag	EPA 6010	93	76 - 124
30528	Ba	EPA 6010	90	76 - 124
30528	Be	EPA 6010	89	76 - 124
30528	Cd	EPA 6010	89	76 - 124
30528	Cr	EPA 6010	130	76 - 124
30528	Cu	EPA 6010	94	76 - 124
30528	Ni	EPA 6010	88	76 - 124
30528	Pb	EPA 6010	91	76 - 124
30528	Sb	EPA 6010	88	76 - 124
30528	Zn	EPA 6010	100	76 - 124
30529	Ag	EPA 6010	92	76 - 124
30529	Ba	EPA 6010	94	76 - 124
30529	Be	EPA 6010	90	76 - 124
30529	Cd	EPA 6010	83	76 - 124
30529	Cr	EPA 6010	89	76 - 124
30529	Cu	EPA 6010	92	76 - 124
30529	Ni	EPA 6010	86	76 - 124
30529	Pb	EPA 6010	86	76 - 124
30529	Sb	EPA 6010	89	76 - 124
30529	Zn	EPA 6010	75	76 - 124

Unspiked Sample Duplicate Information					
Batch Number	Analyte	Method	Sample 1 RPD	Sample 2 RPD	RPD Range
30879	%Moist	ASTM D 2216	1	1	0 - 40
31061	CN	EPA 9010	0	14	0 - 30
31062	CN	EPA 9010	1	0	0 - 30

Analytical Services Inc. Batch QC  
For Report Number :84221

## Unspiked Sample Duplicate Information

Batch Number	Analyte	Method	Sample 1 RPD	Sample 2 RPD	RPD Range
31065	CN	EPA 9010	0	14	0 - 30

Sample Batch Information  
Analysis : Hg

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
30353BLANK	HG	06/25/97	1245	MB		06/26/97	1404	FBS	HG1
30353LCS	HG	06/25/97	1245	MB		06/26/97	1406	FBS	HG1
30353LCSD	HG	06/25/97	1245	MB		06/26/97	1408	FBS	HG1
84205MS	HG	06/25/97	1245	MB		06/26/97	1411	FBS	HG1
84205MSD	HG	06/25/97	1245	MB		06/26/97	1413	FBS	HG1
84221-10DUP	HG	06/25/97	1245	MB		06/26/97	1512	FBS	HG1
84179-5	HG	06/24/97	1245	MB		06/26/97	1418	FBS	HG1
84192-10	HG	06/24/97	1245	MB		06/26/97	1422	FBS	HG1
84192-9	HG	06/24/97	1245	MB		06/26/97	1420	FBS	HG1
84191	HG	06/24/97	1245	MB		06/26/97	1430	FBS	HG1
84201-1	HG	06/24/97	1245	MB		06/26/97	1432	FBS	HG1
84201-2	HG	06/24/97	1245	MB		06/26/97	1434	FBS	HG1
84201-3	HG	06/24/97	1245	MB		06/26/97	1437	FBS	HG1
84205	HG	06/24/97	1245	MB		06/26/97	1415	FBS	HG1
84221-1	HG	06/24/97	1245	MB		06/26/97	1439	FBS	HG1
84221-10	HG	06/24/97	1245	MB		06/26/97	1446	FBS	HG1
84221-2	HG	06/24/97	1245	MB		06/26/97	1441	FBS	HG1
84221-9	HG	06/24/97	1245	MB		06/26/97	1444	FBS	HG1
84238-1	HG	06/24/97	1245	MB		06/26/97	1448	FBS	HG1
84248	HG	06/24/97	1245	MB		06/26/97	1451	FBS	HG1
84251-1	HG	06/24/97	1245	MB		06/26/97	1458	FBS	HG1
84251-2	HG	06/24/97	1245	MB		06/26/97	1500	FBS	HG1
84253	HG	06/24/97	1245	MB		06/26/97	1503	FBS	HG1
84272-1	HG	06/24/97	1245	MB		06/26/97	1505	FBS	HG1
84272-2	HG	06/24/97	1245	MB		06/26/97	1507	FBS	HG1
84272-5	HG	06/24/97	1245	MB		06/26/97	1510	FBS	HG1

Sample Batch Information  
Analysis : Hg

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
84221-12	HG	06/24/97	2235	MB		06/25/97	1355	FBS	HG1
84221-13	HG	06/24/97	2235	MB		06/25/97	1402	FBS	HG1
84221-14	HG	06/24/97	2235	MB		06/25/97	1409	FBS	HG1
84221-15	HG	06/24/97	2235	MB		06/25/97	1421	FBS	HG1
84221-16	HG	06/24/97	2235	MB		06/25/97	1429	FBS	HG1
30354BLANK	HG	06/24/97	2235	MB		06/25/97	1332	FBS	HG1
30354LCS	HG	06/24/97	2235	MB		06/25/97	1334	FBS	HG1
30354LCSD	HG	06/24/97	2235	MB		06/25/97	1336	FBS	HG1
84221-17MS	HG	06/24/97	2235	MB	AKA 84221-16	06/25/97	1339	FBS	HG1
84221-18MSD	HG	06/24/97	2235	MB	AKA 84221-16	06/25/97	1341	FBS	HG1
84221-11DUP	HG	06/24/97	2235	MB	AKA 84221-3	06/25/97	1436	FBS	HG1
84221-3	HG	06/24/97	2235	MB		06/25/97	1343	FBS	HG1

Sample Batch Information  
Analysis : Hg

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
84221-19	hg	06/25/97	1000	MB		06/25/97	1556	FBS	HG1
84221-20	hg	06/25/97	1000	MB		06/25/97	1603	FBS	HG1
84221-21	hg	06/25/97	1000	MB		06/25/97	1615	FBS	HG1
84221-22	hg	06/25/97	1000	MB		06/25/97	1622	FBS	HG1
84221-23	hg	06/25/97	1000	MB		06/25/97	1629	FBS	HG1
84221-24	hg	06/25/97	1000	MB		06/25/97	1641	FBS	HG1
84221-25	hg	06/25/97	1000	MB		06/25/97	1648	FBS	HG1
84221-26	hg	06/25/97	1000	MB		06/25/97	1655	FBS	HG1
84221-27	hg	06/25/97	1000	MB		06/25/97	1707	FBS	HG1
84221-28	hg	06/25/97	1000	MB		06/25/97	1719	FBS	HG1
84221-5	hg	06/25/97	1000	MB		06/25/97	1549	FBS	HG1
84221-6	hg	06/25/97	1000	MB		06/25/97	1537	FBS	HG1
30355BLANK	hg	06/25/97	1000	MB		06/25/97	1525	FBS	HG1
30355LCS	hg	06/25/97	1000	MB		06/25/97	1527	FBS	HG1
30355LCSD	hg	06/25/97	1000	MB		06/25/97	1529	FBS	HG1
84221-6B MS	hg	06/25/97	1000	MB		06/25/97	1532	FBS	HG1
84221-6B MSD	hg	06/25/97	1000	MB		06/25/97	1534	FBS	HG1
84221-6B DUP	hg	06/25/97	1000	MB		06/25/97	1726	FBS	HG1

Sample Batch Information  
Analysis : Ag, Ba, Be, Cd, Cr, Cu, Ni, Pb, Sb, Zn

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
84192-10		06/23/97	0835	MTK	TRACE	06/23/97	1638	MAB	ICP2
84192-6		06/23/97	0835	MTK	TRACE	06/23/97	1650	MAB	ICP2
84192-7		06/23/97	0835	MTK	TRACE	06/23/97	1653	MAB	ICP2
84192-8		06/23/97	0835	MTK	TRACE	06/23/97	1657	MAB	ICP2
84192-9		06/23/97	0835	MTK	TRACE	06/23/97	1701	MAB	ICP2
30509BLANK		06/23/97	0835	MTK	TRACE	06/23/97	1603	MAB	ICP2
30509LCS		06/23/97	0835	MTK	TRACE	06/23/97	1607	MAB	ICP2
30509LCSD		06/23/97	0835	MTK	TRACE	06/23/97	1610	MAB	ICP2
84221-1MS		06/23/97	0835	MTK	TRACE	06/23/97	1614	MAB	ICP2
84221-1MSD		06/23/97	0835	MTK	TRACE	06/23/97	1618	MAB	ICP2
84221-2PDS		06/23/97	0835	MTK	TRACE	06/23/97	1622	MAB	ICP2
84221-9DUP		06/23/97	0835	MTK	TRACE	06/23/97	1626	MAB	ICP2
84221-1		06/23/97	0835	MTK	TRACE	06/23/97	1630	MAB	ICP2
84221-10		06/23/97	0835	MTK	TRACE	06/23/97	1705	MAB	ICP2
84221-2		06/23/97	0835	MTK	TRACE	06/23/97	1634	MAB	ICP2
84221-9		06/23/97	0835	MTK	TRACE	06/23/97	1748	MAB	ICP2
84231-1		06/23/97	0835	MTK	TRACE	06/23/97	1709	MAB	ICP2
84231-10		06/23/97	0835	MTK	TRACE	06/23/97	1713	MAB	ICP2
84231-11		06/23/97	0835	MTK	TRACE	06/23/97	1717	MAB	ICP2
84231-12		06/23/97	0835	MTK	TRACE	06/23/97	1721	MAB	ICP2
84231-13		06/23/97	0835	MTK	TRACE	06/23/97	1725	MAB	ICP2
84231-14		06/23/97	0835	MTK	TRACE	06/23/97	1737	MAB	ICP2
84231-15		06/23/97	0835	MTK	TRACE	06/23/97	1741	MAB	ICP2
84231-16		06/23/97	0835	MTK	TRACE	06/23/97	1744	MAB	ICP2



Sample Batch Information  
Analysis : Se, As, Tl

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
30511BLANK	Se	06/23/97	2000	MB	AKA 84221-18	06/26/97	1117	MCW	AA1
30511LCS	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
30511LCSD	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
84221-17MS	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
84221-17MSD	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
84221-17PDS	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
84221-11DUP	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
84171	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
84172-3	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
84172-7	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
84221-11	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
84221-12	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
84221-13	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
84221-14	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
84221-15	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
84221-16	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
84221-17	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
84221-18	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
84221-19	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
84221-20	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
84221-21	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
84221-22	Se	06/23/97	2000	MB	AKA 84221-18	06/26/97	1117	MCW	AA1
84221-23	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
84221-24	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
84221-25	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
84221-26	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
84221-27	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
S-BLK	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
HPS 690703	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
HPS	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
LCDI	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
LCDI	Se	06/23/97	2000	MB		06/26/97	1117	MCW	AA1
30511BLANK	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
30511LCS	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
30511LCSD	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
84221-17MS	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
84221-17MSD	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
84221-17PDS	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
84221-11DUP	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
84171	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
84172-3	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
84172-7	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
84221-11	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
84221-12	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
84221-13	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
84221-14	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
84221-15	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
84221-16	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
84221-17	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1

Sample Batch Information  
Analysis : Se, As, Tl

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
84221-18	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
84221-19	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
84221-20	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
84221-21	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
84221-22	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
84221-23	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
84221-24	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
84221-25	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
84221-26	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
84221-27	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
S-BLK	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
HPS 690703	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
HPS	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
LCDI	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
LCDI	As	06/23/97	2000	MB		06/27/97	1139	MCW	AA1
30511BLANK	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
30511LCS	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
30511LCSD	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
84221-17MS	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
84221-17MSD	Tl	06/23/97	2000	MB	AKA 84221-18	06/25/97	0945	MCW	AA1
84221-17PDS	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
84221-11DUP	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
84171	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
84172-3	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
84172-7	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
84221-11	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
84221-12	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
84221-13	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
84221-14	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
84221-15	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
84221-16	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
84221-17	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
84221-18	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
84221-19	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
84221-20	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
84221-21	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
84221-22	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
84221-23	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
84221-24	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
84221-25	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
84221-26	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
84221-27	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
S-BLK	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
HPS 690703	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
HPS	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
LCDI	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1
LCDI	Tl	06/23/97	2000	MB		06/25/97	0945	MCW	AA1

Sample Batch Information  
Analysis : Tl, Se, As

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
30512BLANK	Tl	06/23/97	1910	MB	AKA 84273-13	06/25/97	1234	MCW	AA1
30512LCS	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
30512LCSD	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-12MS	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-12MSD	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-13PDS	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-10DUP	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84221-28	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84221-3	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84221-5	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84221-6	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84223	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-10	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-11	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-12	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-13	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-14	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-15	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-16	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-17	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-4	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-5	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-6	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-7	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-8	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-9	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
S-BLK	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
HPS 690703	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
HPS	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
LCDI	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
LCDI	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
30512BLANK	Se	06/23/97	1910	MB	AKA 84273-13	06/26/97	0805	MCW	AA1
30512LCS	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
30512LCSD	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-12MS	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-12MSD	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-13PDS	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-10DUP	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84221-28	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84221-3	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84221-5	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84221-6	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84223	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-10	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-11	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-12	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-13	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-14	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-15	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1

Sample Batch Information  
Analysis : Tl, Se, As

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
84273-16	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-17	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-4	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-5	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-6	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-7	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-8	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-9	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
S-BLK	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
HPS 690703	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
HPS	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
LCDI	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
LCDI	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
30512BLANK	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
30512LCS	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
30512LCSD	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-12MS	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-12MSD	As	06/23/97	1910	MB	AKA 84273-13	06/27/97	1445	MCW	AA1
84273-13PDS	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-10DUP	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84221-28	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA
84221-3	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84221-5	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84221-6	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84223	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-10	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-11	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-12	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-13	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-14	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-15	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-16	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-17	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-4	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-5	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-6	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-7	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-8	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-9	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
S-BLK	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
HPS 690703	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
HPS	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
LCDI	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
LCDI	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1

Sample Batch Information  
Analysis : Tl, Se, As

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
30514BLANK	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
30514LCS	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
30514LCSD	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
84168-20MS	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
84168-20MSD	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
84168-16PDS	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
84168-15DUP	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
84168-15	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
84168-16	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
84168-20	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
84168-23	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
84221-1	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
84221-10	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
84221-2	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
84221-9	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
84231-20	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
84231-21	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
84231-22	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
84248	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
84253	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
84259-10	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
84259-12	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
84259-17	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
84259-2	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
84259-4	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
84259-5	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
84259-8	Tl	06/24/97	0735	MTK		06/25/97	0737	MCW	AA1
30514BLANK	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
30514LCS	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
30514LCSD	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
84168-20MS	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
84168-20MSD	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
84168-16PDS	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
84168-15DUP	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
84168-15	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
84168-16	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
84168-20	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
84168-23	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
84221-1	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
84221-10	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
84221-2	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
84221-9	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
84231-20	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
84231-21	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
84231-22	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
84248	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
84253	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
84259-10	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
84259-12	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1

Sample Batch Information  
Analysis : Tl, Se, As

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
84259-17	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
84259-2	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
84259-4	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
84259-5	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
84259-8	Se	06/24/97	0735	MTK		06/26/97	1333	MCW	AA1
30514BLANK	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
30514LCS	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
30514LCSD	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
84168-20MS	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
84168-20MSD	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
84168-16PDS	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
84168-15DUP	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
84168-15	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
84168-16	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
84168-20	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
84168-23	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
84221-1	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
84221-10	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
84221-2	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
84221-9	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
84231-20	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
84231-21	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
84231-22	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
84248	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
84253	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
84259-10	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
84259-12	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
84259-17	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
84259-2	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
84259-4	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
84259-5	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1
84259-8	As	06/24/97	0735	MTK		06/27/97	1703	MCW	AA1

Sample Batch Information  
Analysis :

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
30526BLANK		06/25/97	0825	CJC	TCLP	06/25/97	1753	MAB	ICP1
30526LCS		06/25/97	0825	CJC	TCLP	06/25/97	1758	MAB	ICP1
30526LCSD		06/25/97	0825	CJC	TCLP	06/25/97	1802	MAB	ICP1
84158-1MS		06/25/97	0825	CJC	TCLP	06/25/97	1806	MAB	ICP1
84158-1MSD		06/25/97	0825	CJC	TCLP	06/25/97	1811	MAB	ICP1
84158-1PDS		06/25/97	0825	CJC	TCLP	06/25/97	1815	MAB	ICP1
84158-2DUP		06/25/97	0825	CJC	TCLP	06/25/97	1820	MAB	ICP1
84158-1		06/25/97	0825	CJC	TCLP	06/25/97	1824	MAB	ICP1
84158-2		06/25/97	0825	CJC	TCLP	06/25/97	1828	MAB	ICP1
84273-5		06/25/97	0825	CJC	TCLP	06/25/97	1842	MAB	ICP1
84273-6		06/25/97	0825	CJC	TCLP	06/25/97	1846	MAB	ICP1
LCDI		06/25/97	0825	CJC	TCLP	06/25/97	1850	MAB	ICP1
LCDI		06/25/97	0825	CJC	TCLP	06/25/97	1855	MAB	ICP1
84221-5		06/25/97	1200	CJC	TCLP	06/25/97	1921	MAB	ICP1
84221-6		06/25/97	1200	CJC	TCLP	06/25/97	1934	MAB	ICP1
84273-10		06/25/97	1200	CJC	TCLP	06/25/97	1859	MAB	ICP1
84347		06/25/97	1200	CJC	TCLP	06/25/97	1903	MAB	ICP1
84311-2		06/25/97	1200	CJC	TCLP	06/25/97	1916	MAB	ICP1
84273-14		06/25/97	1200	CJC	TCLP	06/25/97	1912	MAB	ICP1
84273-11-1		06/25/97	1200	CJC	TCLP	06/25/97	1908	MAB	ICP1
84273-4		06/25/97	1200	CJC	TCLP	06/25/97	1938	MAB	ICP1
84273-7		06/25/97	1200	CJC	TCLP	06/25/97	1943	MAB	ICP1
84273-8		06/25/97	1200	CJC	TCLP	06/25/97	1947	MAB	ICP1
84273-9		06/25/97	1200	CJC	TCLP	06/25/97	1951	MAB	ICP1
84273-15		06/25/97	1200	CJC	TCLP	06/25/97	1956	MAB	ICP1
84273-16		06/25/97	1200	CJC	TCLP	06/25/97	2000	MAB	ICP1
84290-1		06/25/97	1200	CJC	TCLP	06/25/97	2004	MAB	ICP1

Sample Batch Information  
Analysis : Ag, Ba, Be, Cd, Cr, Cu, Ni, Pb, Sb, Zn

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
30528BLANK		06/25/97	0825	MTK	TRACE	06/26/97	1008	MLR	ICP2
30528LCS		06/25/97	0825	MTK	TRACE	06/26/97	1013	MLR	ICP2
30528LCSD		06/25/97	0825	MTK	TRACE	06/26/97	1017	MLR	ICP2
84221-17MS		06/25/97	0825	MTK	TRACE	06/26/97	1021	MLR	ICP2
84221-17MSD		06/25/97	0825	MTK	AKA 84221-18	06/26/97	1025	MLR	ICP2
84221-18PDS		06/25/97	0825	MTK	TRACE	06/26/97	1029	MLR	ICP2
84221-11DUP		06/25/97	0825	MTK	TRACE	06/26/97	1033	MLR	ICP2
84221-11		06/25/97	0825	MTK	TRACE	06/26/97	1042	MLR	ICP2
84221-12		06/25/97	0825	MTK	TRACE	06/26/97	1046	MLR	ICP2
84221-13		06/25/97	0825	MTK	TRACE	06/26/97	1122	MLR	ICP2
84221-14		06/25/97	0825	MTK	TRACE	06/26/97	1126	MLR	ICP2
84221-15		06/25/97	0825	MTK	TRACE	06/26/97	1130	MLR	ICP2
84221-16		06/25/97	0825	MTK	TRACE	06/26/97	1134	MLR	ICP2
84221-17		06/25/97	0825	MTK	TRACE	06/26/97	1038	MLR	ICP2
84221-18		06/25/97	0825	MTK	TRACE	06/26/97	1038	MLR	ICP2
84221-19		06/25/97	0825	MTK	TRACE	06/26/97	1138	MLR	ICP2
84221-20		06/25/97	0825	MTK	TRACE	06/26/97	1142	MLR	ICP2
84221-21		06/25/97	0825	MTK	TRACE	06/26/97	1147	MLR	ICP2
84221-22		06/25/97	0825	MTK	TRACE	06/26/97	1151	MLR	ICP2
84221-23		06/25/97	0825	MTK	TRACE	06/26/97	1155	MLR	ICP2
84221-24		06/25/97	0825	MTK	TRACE	06/26/97	1159	MLR	ICP2
84221-25		06/25/97	0825	MTK	TRACE	06/26/97	1212	MLR	ICP2
84221-26		06/25/97	0825	MTK	TRACE	06/26/97	1216	MLR	ICP2
84221-27		06/25/97	0825	MTK	TRACE	06/26/97	1220	MLR	ICP2
84221-28		06/25/97	0825	MTK	TRACE	06/26/97	1224	MLR	ICP2
84221-3		06/25/97	0825	MTK	TRACE	06/26/97	1229	MLR	ICP2
84221-5		06/25/97	0825	MTK	TRACE	06/26/97	1239	MLR	ICP2
S-BLK		06/25/97	0825	MTK	TRACE	06/26/97	1243	MLR	ICP2
HPS 690703		06/25/97	0825	MTK	TRACE	06/26/97	1247	MLR	ICP2
HPS		06/25/97	0825	MTK	TRACE	06/26/97	1252	MLR	ICP2



Sample Batch Information  
Analysis : Ag, Ba, Be, Cd, Cr, Cu, Ni, Pb, Sb, Zn

Sample ID	Preparation			Preparation Notes	Analysis			Inst
	Tag	Date	Time By		Date	Time	By	
30529BLANK		06/25/97	0825 MTK	TRACE	06/25/97	2100	MLR	ICP2
30529LCS		06/25/97	0825 MTK	TRACE	06/25/97	2104	MLR	ICP2
30529LCSD		06/25/97	0825 MTK	TRACE	06/25/97	2108	MLR	ICP2
84273-12MS		06/25/97	0825 MTK	AKA 84273-11	06/25/97	2113	MLR	ICP2
84273-13MSD		06/25/97	0825 MTK	AKA 84273-11	06/25/97	2133	MLR	ICP2
84273-13PDS		06/25/97	0825 MTK	AKA 84273-11	06/25/97	2138	MLR	ICP2
84273-10DUP		06/25/97	0825 MTK	AKA 84273-17	06/25/97	2142	MLR	ICP2
84221-6		06/25/97	0825 MTK	TRACE	06/25/97	2150	MLR	ICP2
84273-10		06/25/97	0825 MTK	TRACE	06/25/97	2154	MLR	ICP2
84273-11		06/25/97	0825 MTK	TRACE	06/25/97	2207	MLR	ICP2
84273-12		06/25/97	0825 MTK	TRACE	06/25/97	2146	MLR	ICP2
84273-14		06/25/97	0825 MTK	TRACE	06/25/97	2211	MLR	ICP2
84273-15		06/25/97	0825 MTK	TRACE	06/25/97	2215	MLR	ICP2
84273-16		06/25/97	0825 MTK	TRACE	06/25/97	2219	MLR	ICP2
84273-17		06/25/97	0825 MTK	TRACE	06/25/97	2224	MLR	ICP2
84273-4		06/25/97	0825 MTK	TRACE	06/25/97	2228	MLR	ICP2
84273-5		06/25/97	0825 MTK	TRACE	06/25/97	2232	MLR	ICP2
84273-6		06/25/97	0825 MTK	TRACE	06/25/97	2236	MLR	ICP2
84273-7		06/25/97	0825 MTK	TRACE	06/25/97	2240	MLR	ICP2
84273-8		06/25/97	0825 MTK	TRACE	06/25/97	2245	MLR	ICP2
84273-9		06/25/97	0825 MTK	TRACE	06/25/97	2257	MLR	ICP2
S-BLK		06/25/97	0825 MTK	TRACE	06/25/97	2322	MLR	ICP2
HPS 690703		06/25/97	0825 MTK	TRACE	06/25/97	2326	MLR	ICP2
HPS		06/25/97	0825 MTK	TRACE	06/25/97	2331	MLR	ICP2
84379-1		06/25/97	1530 MTK	TRACE	06/25/97	2301	MLR	ICP2
84379-2		06/25/97	1530 MTK	TRACE	06/25/97	2306	MLR	ICP2
84379-3		06/25/97	1530 MTK	TRACE	06/25/97	2310	MLR	ICP2
84379-4		06/25/97	1530 MTK	TRACE	06/25/97	2314	MLR	ICP2
84379-5		06/25/97	1530 MTK	TRACE	06/25/97	2318	MLR	ICP2

Sample Batch Information  
Analysis : %Moist

Sample ID	Tag	Preparation		Preparation	Analysis			Inst
		Date	Time	By	Notes	Date	Time	By
84221-3		/	/			06/20/97	1320	JK
84221-5		/	/			06/20/97	1320	JK
84221-6		/	/			06/20/97	1320	JK
84221-11		/	/			06/20/97	1320	JK
84221-12		/	/			06/20/97	1320	JK
84221-13		/	/			06/20/97	1320	JK
84221-14		/	/			06/20/97	1320	JK
84221-15		/	/			06/20/97	1320	JK
84221-16		/	/			06/20/97	1320	JK
84221-17		/	/		84221-18DUP	06/20/97	1320	JK
84221-18DUP		/	/		84221-17	06/20/97	1320	JK
84221-19		/	/			06/20/97	1320	JK
84221-21		/	/			06/20/97	1320	JK
84221-22		/	/			06/20/97	1320	JK
84221-23		/	/			06/20/97	1320	JK
84221-24		/	/			06/20/97	1320	JK
84221-25		/	/			06/20/97	1320	JK
84221-26		/	/			06/20/97	1320	JK
84221-27		/	/			06/20/97	1320	JK
84221-28		/	/			06/20/97	1320	JK
84221-28DUP		/	/			06/20/97	1320	JK
84221-20		/	/			06/20/97	1320	JK

Sample Batch Information  
Analysis :

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
84273-7	HG	06/27/97	2040	MB		06/30/97	1220	FBS	HG1
30922BLANK	HG	06/27/97	2040	MB		06/30/97	1147	FBS	HG1
30922LCS	HG	06/27/97	2040	MB		06/30/97	1150	FBS	HG1
30922LCSD	HG	06/27/97	2040	MB		06/30/97	1152	FBS	HG1
84221-6MS	HG	06/27/97	2040	MB		06/30/97	1154	FBS	HG1
84221-6MSD	HG	06/27/97	2040	MB		06/30/97	1157	FBS	HG1
84158-2DUP	HG	06/27/97	2040	MB		06/30/97	1254	FBS	HG1
84158-1	HG	06/27/97	2040	MB		06/30/97	1204	FBS	HG1
84158-2	HG	06/27/97	2040	MB		06/30/97	1206	FBS	HG1
84221-5	HG	06/27/97	2040	MB		06/30/97	1246	FBS	HG1
84221-6	HG	06/27/97	2040	MB		06/30/97	1159	FBS	HG1
84273-10	HG	06/27/97	2040	MB		06/30/97	1227	FBS	HG1
84273-11	HG	06/27/97	2040	MB		06/30/97	1230	FBS	HG1
84273-12	HG	06/27/97	2040	MB	AKA 84273-13	06/30/97	1232	FBS	HG1
84273-14	HG	06/27/97	2040	MB		06/30/97	1234	FBS	HG1
84273-15	HG	06/27/97	2040	MB		06/30/97	1242	FBS	HG1
84273-16	HG	06/27/97	2040	MB		06/30/97	1244	FBS	HG1
84273-4	HG	06/27/97	2040	MB		06/30/97	1213	FBS	HG1
84273-5	HG	06/27/97	2040	MB		06/30/97	1216	FBS	HG1
84273-6	HG	06/27/97	2040	MB		06/30/97	1218	FBS	HG1
84273-8	HG	06/27/97	2040	MB		06/30/97	1223	FBS	HG1
84273-9	HG	06/27/97	2040	MB		06/30/97	1225	FBS	HG1
84290-1	HG	06/27/97	2040	MB		06/30/97	1201	FBS	HG1
84416	HG	06/27/97	2040	MB		06/30/97	1249	FBS	HG1
84424-1	HG	06/27/97	2040	MB		06/30/97	1251	FBS	HG1

Sample Batch Information  
Analysis : CN

Sample ID	Tag	Preparation			Preparation	Analysis			Inst
		Date	Time	By	Notes	Date	Time	By	
31061BLK		06/28/97	0805	ARS	MIDI-DIST	06/28/97	1115	ARS	GENE5
31061LCS		06/28/97	0805	ARS	MIDI-DIST	06/28/97	1115	ARS	GENE5
31061LCSD		06/28/97	0805	ARS	MIDI-DIST	06/28/97	1115	ARS	GENE5
84221-16MS		06/28/97	0805	ARS	AKA 84221-17MS	06/28/97	1115	ARS	GENE5
84221-16MSD		06/28/97	0805	ARS	AKA 84221-18MSD	06/28/97	1115	ARS	GENE5
84221-3		06/28/97	0805	ARS	MIDI-DIST	06/28/97	1115	ARS	GENE5
84221-11		06/28/97	0805	ARS	MIDI-DIST	06/28/97	1115	ARS	GENE5
84221-5		06/28/97	0805	ARS	MIDI-DIST	06/28/97	1115	ARS	GENE5
84221-6		06/28/97	0805	ARS	MIDI-DIST	06/28/97	1115	ARS	GENE5
84221-12		06/28/97	0805	ARS	MIDI-DIST	06/28/97	1115	ARS	GENE5
84221-13		06/28/97	1030	ARS	MIDI-DIST	06/28/97	1315	ARS	GENE5
31061CAL5		06/28/97	1030	ARS	MIDI-DIST	06/28/97	1315	ARS	GENE5
31061CAL15		06/28/97	1030	ARS	MIDI-DIST	06/28/97	1315	ARS	GENE5
84221-14		06/28/97	1030	ARS	MIDI-DIST	06/28/97	1315	ARS	GENE5
84221-15		06/28/97	1030	ARS	MIDI-DIST	06/28/97	1315	ARS	GENE5
84221-16		06/28/97	1030	ARS	MIDI-DIST	06/28/97	1315	ARS	GENE5
84221-19		06/28/97	1030	ARS	MIDI-DIST	06/28/97	1315	ARS	GENE5
84221-20		06/28/97	1030	ARS	MIDI-DIST	06/28/97	1315	ARS	GENE5
84221-21		06/28/97	1030	ARS	MIDI-DIST	06/28/97	1315	ARS	GENE5
84221-22		06/28/97	1030	ARS	MIDI-DIST	06/28/97	1315	ARS	GENE5
84221-23		06/28/97	1230	ARS	MIDI-DIST	06/29/97	1000	ARS	GE
84221-24		06/28/97	1230	ARS	MIDI-DIST	06/29/97	1000	ARS	GENE5
84221-25		06/28/97	1230	ARS	MIDI-DIST	06/29/97	1000	ARS	GENE5
84221-27		06/28/97	1230	ARS	MIDI-DIST	06/29/97	1000	ARS	GENE5
84221-28		06/28/97	1230	ARS	MIDI-DIST	06/29/97	1000	ARS	GENE5
84221-1		06/28/97	1230	ARS	MIDI-DIST	06/29/97	1000	ARS	GENE5
84221-9		06/28/97	1230	ARS	MIDI-DIST	06/29/97	1000	ARS	GENE5
84221-12RA		07/01/97	0925	ARS	MIDI-DIST	07/01/97	1340	ARS	GENE5
84221-12RADUP		07/01/97	0925	ARS	MIDI-DIST	07/01/97	1340	ARS	GENE5
84221-23RA		07/01/97	0925	ARS	MIDI-DIST	07/01/97	1340	ARS	GENE5
84221-23RADUP		07/01/97	0925	ARS	MIDI-DIST	07/01/97	1340	ARS	GENE5
31065BLK		07/01/97	0925	ARS	MIDI-DIST	07/01/97	1340	ARS	GENE5

Sample Batch Information  
Analysis : CN

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
31062BLK		06/29/97	0855	ARS	MIDI-DIST	06/29/97	1200	ARS	GENE5
31062LCS		06/29/97	0855	ARS	MIDI-DIST	06/29/97	1200	ARS	GENE5
31062LCSD		06/29/97	0855	ARS	MIDI-DIST	06/29/97	1200	ARS	GENE5
84273-11MS		06/29/97	0855	ARS	AKA 84273-12	06/29/97	1200	ARS	GENE5
84273-11MSD		06/29/97	0855	ARS	AKA 84273-13	06/29/97	1200	ARS	GENE5
84273-10		06/29/97	0855	ARS	MIDI-DIST	06/29/97	1200	ARS	GENE5
84273-4		06/29/97	0855	ARS	MIDI-DIST	06/29/97	1200	ARS	GENE5
84273-5		06/29/97	0855	ARS	MIDI-DIST	06/29/97	1200	ARS	GENE5
84273-6		06/29/97	0855	ARS	MIDI-DIST	06/29/97	1200	ARS	GENE5
84273-6DUP		06/29/97	0855	ARS	MIDI-DIST	06/29/97	1200	ARS	GENE5
84273-7		06/29/97	1123	ARS	MIDI-DIST	06/29/97	1520	ARS	GENE5
31062CAL5		06/29/97	1123	ARS	MIDI-DIST	06/29/97	1520	ARS	GENE5
31062CAL15		06/29/97	1123	ARS	MIDI-DIST	06/29/97	1520	ARS	GENE5
84273-8		06/29/97	1123	ARS	MIDI-DIST	06/29/97	1520	ARS	GENE5
84273-9		06/29/97	1123	ARS	MIDI-DIST	06/29/97	1520	ARS	GENE5
84273-11		06/29/97	1123	ARS	MIDI-DIST	06/29/97	1520	ARS	GENE5
84273-14		06/29/97	1123	ARS	MIDI-DIST	06/29/97	1520	ARS	GENE5
84273-15		06/29/97	1123	ARS	MIDI-DIST	06/29/97	1520	ARS	GENE5
84273-16		06/29/97	1123	ARS	MIDI-DIST	06/29/97	1520	ARS	GENE5
84273-17		06/29/97	1123	ARS	MIDI-DIST	06/29/97	1520	ARS	GENE5
84273-3		06/29/97	1123	ARS	MIDI-DIST	06/30/97	1005	ARS	GENE5
84221-10		06/29/97	1123	ARS	MIDI-DIST	06/30/97	1005	ARS	GENE5
84273-6RA		07/01/97	1150	ARS	MIDI-DIST	07/01/97	1540	ARS	GENE5
84273-6RADUP		07/01/97	1150	ARS	MIDI-DIST	07/01/97	1540	ARS	GENE5
84273-14RA		07/01/97	1150	ARS	MIDI-DIST	07/01/97	1540	ARS	GENE5
84273-14RADUP		07/01/97	1150	ARS	MIDI-DIST	07/01/97	1540	ARS	GENE5
31065BLK		07/01/97	0925	ARS	MIDI-DIST	07/01/97	1340	ARS	GENE5

Sample Batch Information  
Analysis : CN

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
31065BLK		07/01/97	0925	ARS	MIDI-DIST	07/01/97	1340	ARS	GENE5
31065LCS		07/01/97	0925	ARS	MIDI-DIST	07/01/97	1340	ARS	GENE5
31065LCSD		07/01/97	0925	ARS	MIDI-DIST	07/01/97	1340	ARS	GENE5
84221-2MS		07/01/97	0925	ARS	MIDI-DIST	07/01/97	1340	ARS	GENE5
84221-2MSD		07/01/97	0925	ARS	MIDI-DIST	07/01/97	1340	ARS	GENE5
84221-12		07/01/97	0925	ARS	RA FOR 31061	07/01/97	1340	ARS	GENE5
84221-12DUP		07/01/97	0925	ARS	RA FOR 31061	07/01/97	1340	ARS	GENE5
84221-23		07/01/97	0925	ARS	RA FOR 31061	07/01/97	1340	ARS	GENE5
84221-23DUP		07/01/97	0925	ARS	RA FOR 31061	07/01/97	1340	ARS	GENE5
84221-2		07/01/97	0925	ARS	MIDI-DIST	07/01/97	1340	ARS	GENE5
84221-26		07/01/97	1150	ARS	MIDI-DIST	07/01/97	1540	ARS	GENE5
84273-6		07/01/97	1150	ARS	RA FOR 31062	07/01/97	1540	ARS	GENE5
84273-6DUP		07/01/97	1150	ARS	RA FOR 31062	07/01/97	1540	ARS	GENE5
84273-14		07/01/97	1150	ARS	RA FOR 31062	07/01/97	1540	ARS	GENE5
84273-14DUP		07/01/97	1150	ARS	RA FOR 31062	07/01/97	1540	ARS	GENE5
84273-2		07/01/97	1150	ARS	MIDI-DIST	07/01/97	1540	ARS	GENE5
31065CAL5		07/01/97	1150	ARS	MIDI-DIST	07/01/97	1540	ARS	GENE5
31065CAL15		07/01/97	1150	ARS	MIDI-DIST	07/01/97	1540	ARS	GENE5

Project Number TF0320.015

Project Location SWISS BIRKENHEAD

Laboratory ASI

Sampler(s)/Affiliation J. HUGHES / GSI  
D. PAGE

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID
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SAMPLE BOTTLE / CONTAINER DESCRIPTION

[illegible]

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/  
Containers

3029

Relinquished by: <u>[Signature]</u>	Organization: <u>GSM (TAMPA)</u>	Date: <u>6/18/97</u> Time: <u>1705</u>	Seal Intact?
Received by: <u>[Signature]</u>	Organization: <u>Analytical Services Inc</u>	Date: <u>6/18/97</u> Time: <u>1715</u>	Yes No N/A
Relinquished by: <u>[Signature]</u>	Organization: _____	Date: <u>1/1/</u> Time: _____	Seal Intact?
Received by: <u>[Signature]</u>	Organization: <u>AST</u>	Date: <u>6/19/97</u> Time: <u>08:30</u>	Yes (No) N/A

Special Instructions/Remarks: Ice, no seal, temp = 5C, pH = 1 (metals) 12 (CN) on waters

DIRECT ANY / ALL QUESTIONS TO KATHY THIRLMAN AT 813 561 1921

AST cover # 404

Delivery Method: ☐ In Person ☐ Common Carrier

☒ Lab Courier

☐ Other

**SPECIFY**

**SPECIFY**

Project Number TF0320.015  
Project Location SLUGS - BIRMINGHAM  
Laboratory ASI  
Sampler(s)/Affiliation SITUGATES/CSM  
D. PAGE

SAMPLE IDENTITY		Code	Date/Time Sampled	Lab ID	SAMPLE BOTTLE / CONTAINER DESCRIPTION								TOTAL #	ASI #
					EPA 8260 40 mL GLASS VIAL HCL	EPA 8260 402 GLASS VIAL	TCLP (VOL) 1 LITER GLASS W/							
9706	16-LD-39-FB001	L	6/16/97 1530		3	0	0						653	-1
9706	16-LD-39-EB001	L	1545		3	0	0						653	-2
9706	16-LD-39-S1901	S	-			1	0						1	-3
9706	16-LD-39-S1001	S	1620			1	1						2	-4
9706	16-LD-39-S12003	S	1700			1	1						2	-6
9706	16-LD-39-S10004	S	1800			1	1						2	-7
9706	16-LD-39-S10002	S	6/16/97 1825			1	1						2	-5
9706	16-LD-39-TB001	L			3								3	-8
9706	17-LD-24-EB001	L	6/12/97 1120		3								3	-9
9706	17-LD-24-FB001	L	1110		3								3	-10
9706	17-LD-24-S10003	S	1210			1							1	-13
9706	17-LD-24-S10004	S	1530			1							1	-14
9706	17-LD-24-S10005	S	1615			1							1	-15
9706	17-LD-24-S10006	S	1700			1							1	-16
9706	17-LD-24-S10006	S	1700			1							1	-17, -18

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 21/25 29

Relinquished by: <u>[Signature]</u>	Organization: <u>CSM (TAMPA)</u>	Date: <u>6/18/97</u> Time: <u>1915</u>	Seal Intact? Yes No N/A
Received by: <u>[Signature]</u>	Organization: <u>Analytical Service Inc.</u>	Date: <u>6/18/97</u> Time: <u>1715</u>	Yes No N/A
Relinquished by: <u>[Signature]</u>	Organization: <u>ASI</u>	Date: <u>1/1/97</u> Time: <u>0830</u>	Seal Intact? Yes (No) N/A
Received by: <u>[Signature]</u>	Organization: <u>ASI</u>	Date: <u>6/19/97</u> Time: <u>0830</u>	Yes (No) N/A

Special Instructions/Remarks: ice, no seal, temp = 5C, pH = 1 (metals) 12 (CN)  
DIRECT ANY/ALL QUESTIONS TO KATHI THALMAN AT 813 961 1921

Delivery Method: ☐ In Person ☐ Common Carrier ☒ Lab Courier ☐ Other



Project Number TF0320.015  
Project Location SWC - BIRMINGHAM  
Laboratory ASI  
Sampler(s)/Affiliation J. HUGHES / EIM  
D. PAGE

DATE/TIME  
SAMPLE IDENTITY Code Sampled Lab ID

SAMPLE BOTTLE / CONTAINER DESCRIPTION													TOTAL	ASI #
617-LD-24-S1001	S	6/17/97	—										1	-11
617-LD-24-S1002	S	6/17/97	1740										1	-19
618-LD-24-S1003	S	6/18/97	955										1	-20
618-LD-24-S1004	S	6/18/97	1010										1	-21
618-LD-24-S1005	S	6/18/97	1040										1	-22
618-LD-24-S1006	S	6/18/97	1115										1	-23
618-LD-24-S1007	S	6/18/97	1145										2	-24
618-LD-24-S1008	S	6/18/97	1315										1	-28
618-LD-24-S1009	S	6/18/97	1415										1	-27
618-LD-24-S1010	S	6/18/97	1520										1	-26
618-LD-24-S1011	S	6/18/97	1540										1	-25
618-LD-24-S1012	S	6/18/97	1600										1	-12
COACH												12		

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 47

Relinquished by: <u>[Signature]</u>	Organization: <u>EIM/TAMPA</u>	Date: <u>6/18/97</u> Time: <u>1715</u>	Seal Intact? Yes No N/A
Received by: <u>[Signature]</u>	Organization: <u>Amesbury Ser. Inc.</u>	Date: <u>6/16/97</u> Time: <u>1715</u>	Seal Intact? Yes No N/A
Relinquished by: <u>[Signature]</u>	Organization: <u>ASI</u>	Date: <u>6/19/97</u> Time: <u>0830</u>	Seal Intact? Yes No N/A
Received by: <u>[Signature]</u>	Organization: <u>ASI</u>	Date: <u>6/19/97</u> Time: <u>0830</u>	Seal Intact? Yes No N/A

Special Instructions/Remarks: ice, no seal temp = 5C, pH = 1 (metals) 12 (Cu)  
DIRECT ANY ALL QUESTIONS TO KATHI THALMAN AT 813 561 1921

Delivery Method: ☐ In Person ☐ Common Carrier ☒ Lab Courier ☐ Other

Project Number TF0320.015  
Project Location GROSS - BIRMINGHAM  
Laboratory AB1  
Sampler(s)/Affiliation J. HUGHES / GEM  
D. PAGE

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID
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[illegible]

Sample Code: L = Liquid; S<sub>s</sub> = Solid; A = Air

Total No. of Bottles/  
Containers

3.

Relinquished by: <u>[Signature]</u>	Organization: <u>GSM (TAMPA)</u>	Date <u>6/18/97</u> Time <u>1705</u>	Seal Intact?
Received by: <u>[Signature]</u>	Organization: <u>Analytical Services Inc</u>	Date <u>6/19/97</u> Time <u>1715</u>	Yes No N/A
Relinquished by: <u>[Signature]</u>	Organization: _____	Date <u>1/1</u> Time _____	Seal Intact?
Received by: <u>[Signature]</u>	Organization: <u>ASI</u>	Date <u>6/19/97</u> Time <u>0830</u>	Yes <u>(No)</u> N/A

Special Instructions/Remarks: ice, no seal, temp = 5C, pH = 1 (metals) 12/21/22  
DIRZEEC ANY/ALL QUESTIONS TO KATHY TATUM AT 813 961 152

Delivery Method: ☐ In Person ☐ Common Carrier ☒ Lab Courier ☐ Other \_\_\_\_\_

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID
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TOTAL

ASI#

Total No. of Bottles/  
Containers

30

Relinquished by: <u>[Signature]</u>	Organization: <u>GM Tamin</u>	Date: <u>6/18/97</u> Time: <u>1720</u>	Seal Intact?
Received by: <u>Wm Jones</u>	Organization: <u>Analytical Ser. Inc.</u>	Date: <u>6/18/97</u> Time: <u>1720</u>	Yes No N/A
Relinquished by: <u>[Signature]</u>	Organization: _____	Date: <u>1/1</u> Time: _____	Seal Intact?
Received by: <u>Wm Jones</u>	Organization: <u>AST</u>	Date: <u>6/19/97</u> Time: <u>0830</u>	Yes (No) N/A

Special Instructions/Remarks: ice, no seal, temp = 5C, pH = 1 (metal), 12 (Cu)

DIRECT ANY/ALL QUESTIONS TO KATHY THALMAN AT 813 861 192

Delivery Method: ☐ In Person ☐ Common Carrier \_\_\_\_\_

☒ Lab Courier      ☐ Other \_\_\_\_\_

**SPECIFY**

**SPECIFY**



# SLOSS INDUSTRIES

## DATA VALIDATION CHECKLIST

PROJECT NAME  
PROJECT NUMBER  
SAMPLE  
IDENTIFICATION(S)

Sloss Industries							
TF320.015							
970619-LD-23-TB0001		970619-LD-24-SM0001		970619-LD-23-SM0002			
970619-LD-23-EB0001		970619-LD-24-SM0002		970619-LD-23-SM0003			
970619-LD-23-FB0001		970619-LD-24-SM0003		970619-LD-23-SM0004			
970619-LD-39-SM0005		970619-LD-24-SM0004		970619-LD-23-SM9001			
970619-LD-39-SM0006		970619-LD-23-SM0001 (a)					
		(a) - Additional sample collected for MS/MSD					
June 19, 1997							
Joe Hughes and David Page							
Soil, Sludge/Waste							
Analytical Services, Inc.							
Cyanide (9010), PPT Metals, 8260, 8270, and TCLP 8260, 8270, 8080, 8150							
Geraghty & Miller, Inc./Level II							
84273							
September 19, 1997							

SAMPLE DATE (S)  
SAMPLE TEAM  
SAMPLE MATRIX  
ANALYZING LABORATORY  
ANALYSES REQUESTED  
QA REPORTING LEVEL  
LABORATORY REPORT NO.  
VALIDATION DATE

## FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: *	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Sampling dates noted		X		X	
2. Sampling team indicated		X		X	
3. Sampling identification traceable to location collected		X		X	
4. Sample location		X		X	
5. Sample depth for soils		X		X	
6. Collection technique (bailer, pump, etc.)		X		X	
7. Field sample preparation techniques		X		X	
8. Sample type (grab, composite)		X		X	
9. Sample container type		X		X	
10. Preservation methods		X		X	
11. Chain-of-custody form completed		X		X	
12. Required analytical methods requested		X		X	
13. Field (water and soil) sample logs completed properly and signed		X		X	
14. Number and type of field QC samples collected (blanks, replicates, splits, etc.)		X		X	
15. Field equipment calibration	X				X
16. Field equipment decontamination		X		X	
17. Sample shipping		X		X	
18. Laboratory task order		X		X	

**QC-Quality Control**

\* Field sampling logs = water and/or soil/sediment sampling logs

**COMMENTS:** Field Duplicate Pairs      970619-LD-23-SM0001 and 970619-LD-23-SM9001  
970619-LD-24-SM0001 and 970619-LD-24-SM9001

**All field duplicate and split sample results were reviewed**

MS/MSD 970619-LD-23-SM0001

Slipt with Guardian: 970619-LD-23-SM0001 Split samples will be reviewed under separate cover.  
970619-LD-24-SM0001

## ANALYTICAL DATA PACKAGE DOCUMENTATION

### GENERAL INFORMATION

ALL QA REPORTING LEVELS:	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Method of analysis		X		X	
4. Detection limits of analysis		X		X	
5. Master tracking list		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preparation/extraction date		X		X	
9. Sample analysis date		X		X	
10. Copy of chain-of-custody form signed by lab sample custodian		X		X	
11. Narrative summary of QA or sample problems provided		X		X	

QA - quality assurance

COMMENTS : No qualification was necessary.  
All analytical data were reported as Geraghty & Miller Level II data deliverables

# **INORGANIC ANALYSES TOTAL METALS METHODS**

QA REPORTING LEVEL II REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Holding times		X		X	
2. Detection limits		X		X	
3. Calibration curve standards	X				X
4. Initial calibration verification %R	X				X
5. Continuing calibration verification %R	X				X
6. Blanks					
A. Preparation and calibration blanks		X		X	
B. Equipment rinsate blanks		X		X	
C. Field blanks		X		X	
7. Interference check sample %R (ICP only)	X				X
8. Dilution check sample %R (ICP only)	X				X
9. Laboratory control sample %R		X		X	
10. Matrix spike %R		X		X	
11. Lab duplicate or MSD %R and RPD	X				X
12. LCS duplicate %R and RPD		X		X	
13. Post-digestion analytical spike (FAA only)		X		X	
14. Field duplicate comparison		X		X	
15. Total and dissolved metals comparison	X				X

%R - percent recovery

RPD - relative percent difference

MSD - matrix spike duplicate

ICP - inductively coupled plasma atomic emission spectroscopy

FAA - furnace atomic absorption

NA - not applicable or not analyzed

## **COMMENTS:**

This section was completed for Priority Pollutant Metals. Performance was acceptable, with the following exceptions and notes. All qualified analytical results are summarized in the attached table.

970619-LD-39-SM0005 - MS/MSD & PDS out of control limit, qualified As (8.8 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified Zn (600 mg/Kg) J/Estimated  
970619-LD-39-SM0006 - MS/MSD & PDS out of control limit, qualified As (3.8 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified Zn (1400 mg/Kg) J/Estimated  
970619-LD-24-SM0001 - MS/MSD & PDS out of control limit, qualified As (18 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified Zn (3100 mg/Kg) J/Estimated  
970619-LD-24-SM0002 - MS/MSD & PDS out of control limit, qualified As (15 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified Zn (2900 mg/Kg) J/Estimated  
970619-LD-24-SM0003 - MS/MSD & PDS out of control limit, qualified As (15 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified Zn (2300 mg/Kg) J/Estimated  
970619-LD-24-SM0004 - MS/MSD & PDS out of control limit, qualified As (15 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified Zn (4500 mg/Kg) J/Estimated  
970619-LD-24-SM9001 - MS/MSD & PDS out of control limit, qualified As (17 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified Zn (3000 mg/Kg) J/Estimated

**INORGANIC ANALYSES  
TOTAL METALS METHODS**

**COMMENTS** *Continued:*

970619-LD-23-SM0001 - MS/MSD & PDS out of control limit, qualified As (11 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified Zn (140 mg/Kg) J/Estimated  
970619-LD-23-SM0002 - MS/MSD & PDS out of control limit, qualified As (11.5 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified Zn (300 mg/Kg) J/Estimated  
970619-LD-23-SM0003 - MS/MSD & PDS out of control limit, qualified As (42 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified Zn (280 mg/Kg) J/Estimated  
970619-LD-23-SM0004 - MS/MSD & PDS out of control limit, qualified As (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified Zn (220 mg/Kg) J/Estimated  
970619-LD-23-SM9001 - MS/MSD & PDS out of control limit, qualified As (6.3 mg/kg) J/Estimated  
MS/MSD & PDS out of control limit, qualified Tl (BDL) UJ/Non-detected Estimated  
MS/MSD & PDS out of control limit, qualified Zn (120 mg/Kg) J/Estimated



**INORGANIC ANALYSES  
WET CHEMISTRY METHODS**

QA REPORTING LEVEL II REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Holding times		X		X	
2. Detection limits		X		X	
3. Calibration curve standards	X				X
4. Initial calibration verification %R	X				X
5. Continuing calibration verification %R	X				X
6. Blanks					
A. Preparation and calibration blanks		X		X	
B. Equipment rinsate blanks		X		X	
C. Field blanks		X		X	
7. Laboratory control sample %R		X		X	
8. Matrix spike %R		X		X	
9. Lab duplicate or MSD %R and RPD		X		X	
10. LCS duplicate %R and RPD		X		X	
11. Field duplicate comparison	X				X

%R - percent recovery                      RPD - relative percent difference                      MSD - matrix spike duplicate  
LCS - laboratory control sample duplicate                      NA - not applicable or not analyzed

**COMMENTS:**

This section was completed for cyanide data. Performance was acceptable, with the following exceptions and notes. All qualified analytical results are summarized in the attached table.

Cyanide

970619-LD-39-SM0005 - MS/MSD 0% Rec., qualified detected value (8.3 mg/Kg) J/Estimated  
970619-LD-39-SM0006 - MS/MSD 0% Rec., qualified non-detected value (BDL) R/Rejected  
970619-LD-24-SM0001 - MS/MSD 0% Rec., qualified detected value (3.8 mg/Kg) J/Estimated  
970619-LD-24-SM0002 - MS/MSD 0% Rec., qualified detected value (3.2 mg/Kg) J/Estimated  
970619-LD-24-SM0003 - MS/MSD 0% Rec., qualified detected value (2.4 mg/Kg) J/Estimated  
970619-LD-24-SM0004 - MS/MSD 0% Rec., qualified detected value (4.7 mg/Kg) J/Estimated  
970619-LD-24-SM9001 - MS/MSD 0% Rec., qualified detected value (3.1 mg/Kg) J/Estimated  
970619-LD-23-SM0001 - MS/MSD 0% Rec., qualified detected value (20.3 mg/Kg) J/Estimated  
970619-LD-23-SM0002 - MS/MSD 0% Rec., qualified non-detected value (BDL) R/Rejected  
970619-LD-23-SM0003 - MS/MSD 0% Rec., qualified detected value (136 mg/Kg) J/Estimated  
970619-LD-23-SM0004 - MS/MSD 0% Rec., qualified detected value (4.0 mg/Kg) J/Estimated  
970619-LD-23-SM9001 - MS/MSD 0% Rec., qualified detected value (16.1 mg/Kg) J/Estimated

# **ORGANIC ANALYSES**

QA REPORTING LEVEL II REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	

## **GAS CHROMATOGRAPHY (GC) OR HIGH PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC)**

### **1. Holding times**

A. Extraction holding time

B. Analysis holding time

### **2. Detection limits**

### **3. Blanks**

A. Water blanks (VOCs)

B. Extraction blanks

C. Equipment rinsate blanks

D. Field Blanks

E. Trip blanks

### **4. Initial calibration verification %R**

### **5. Continuing calibration verification %R**

### **6. Matrix spike %R**

### **7. Matrix spike duplicate %R**

### **8. Sample specific lab duplicate (optional)**

### **9. MS/MSD or lab duplicate precision (RPD)**

### **10. Reagent water spike (BS)**

### **11. Reagent water spike duplicate (BSD)**

### **12. BS/BSD precision (RPD)**

### **13. Surrogate spike recoveries**

### **14. Sample chromatograms**

### **15. Field duplicate comparison**

	X		X	
	X		X	
	X		X	
	X		X	
	X		X	
X				X
X				X
	X		X	
	X		X	
X				X
	X		X	
	X		X	
	X		X	
	X		X	
X				X
	X		X	

VOCs - volatile organic compounds

%R - percent recovery

RPD - relative percent difference

MS - matrix spike

MSD - matrix spike duplicate

NA - not analyzed or not applicable

BS - blank spike

BSD - blank spike duplicate

### **COMMENTS:**

This section was completed for TCLP Herbicide Method 8150. Performance was acceptable. No sample qualification was necessary.

**ORGANIC ANALYSES  
VOLATILE ORGANIC COMPOUNDS**

QA REPORTING LEVEL II . REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
1. Holding times		X		X	
2. Detection limits		X		X	
3. Blanks					
A. Water blanks (VOCs)		X		X	
B. Equipment rinsate blanks		X		X	
C. Field Blanks		X		X	
D. Trip blanks		X		X	
4. Instrument tune and performance check	X				X
5. Initial calibration RRFs and %RSDs	X				X
6. Continuing calibration RRFs and %Ds	X				X
7. Matrix spike (MS) %R		X		X	
8. Matrix spike duplicate (MSD) %R		X		X	
9. Sample specific lab duplicate (optional)	X				X
10. MS/MSD or lab duplicate precision (RPD)		X		X	
11. Reagent water spike (BS)		X		X	
12. Reagent water spike duplicate (BSD)		X		X	
13. BS/BSD precision (RPD)		X		X	
14. Laboratory control sample (optional)		X		X	
15. Surrogate spike recoveries		X		X <sup>(1)</sup>	
16. Internal standard retention times and areas	X				X
17. Compound identification and quantitation					
A. Reconstructed ion chromatograms	X				X
B. Quantitation reports	X				X
18. TIC search (optional)	X				X
19. Field duplicate comparison	X				X

VOCs - volatile organic compounds	%D - percent drift	BS - blank spike
RRF - relative response factor	%R - percent recovery	BSD - blank spike duplicate
% RSD - percent relative standard deviation	RPD - relative percent difference	TIC - tentatively identified compound

VOCs - volatile organic compounds  
RRF - relative response factor  
% RSD - percent relative standard deviation

%D - percent drift  
%R - percent recovery  
RPD - relative percent difference

BS - blank spike  
BSD - blank spike duplicate  
TIC - tentatively identified compound

**COMMENTS:**

This section was completed for volatiles Method 8260 and TCLP volatiles Method 8260. Performance was acceptable, with the following exceptions and notes. All qualified analytical results are summarized in the attached table.

**1. The following samples were qualified based on surrogate recovery criteria**

Volatiles by 8260 (Not TCLP)

- 970619-LD-39-SM0005 - All analytical results were <BDL, qualified as UJ/Non-detected Estimated
- 970619-LD-39-SM0006 - All analytical results were <BDL, qualified as UJ/Non-detected Estimated
- 970619-LD-24-SM0001 - All analytical results were <BDL, qualified as UJ/Non-detected Estimated

**ORGANIC ANALYSES  
SEMIVOLATILE ORGANIC COMPOUNDS**

QA REPORTING LEVEL III REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
1. Holding times					
A. Extraction holding time		X		X	
B. Analysis holding time		X		X	
2. Detection limits					
		X		X	
3. Blanks					
A. Water blanks		X		X	
B. Extraction blanks		X		X	
C. Equipment rinsate blanks		X		X	
D. Field Blanks		X		X	
4. Instrument tune and performance check	X				X
5. Initial calibration RRFs and %RSDs	X				X
6. Continuing calibration RRFs and %Ds	X				X
7. Matrix spike (MS) %R		X		X	
8. Matrix spike duplicate (MSD) %R		X		X	
9. Sample specific lab duplicate (optional)	X				X
10. MS/MSD or lab duplicate precision (RPD)		X		X	
11. Laboratory control sample (LCS)		X		X	
12. LCS duplicate (LCSD)		X		X	
13. LCS/LCSD precision (RPD)		X		X	
14. Surrogate spike recoveries		X			X <sup>(1)</sup>
15. Internal standard retention times and areas	X				X
16. Compound identification and quantitation					
A. Reconstructed ion chromatograms	X				X
B. Quantitation reports	X				X
17. TIC search (optional)	X				X
18. Field duplicate comparison	X				X

SVOCs - semivolatile organic compounds  
RRF - relative response factor  
% RSD - percent relative standard deviation

%D - percent drift  
%R - percent recovery  
RPD - relative percent difference

TIC - tentatively identified compound

**COMMENTS:**

This section was completed for semivolatile Method 8270 and TCLP semivolatile Method 8270. Performance was acceptable, with the following exceptions and notes. All qualifies analytical results are summarized in the attached table.

1. The following samples were qualified based on surrogate recoveries < 10% for the acid fraction only

TCLP Base Neutral Acids by Method 8270

- 970616-LD-39-SM0002 - ACID FRACTION ONLY/phenolic compounds - Qualify all analytical results <BDL as R/Rejected
- 970619-LD-39-SM0005 - ACID FRACTION ONLY/phenolic compounds - Qualify all analytical results <BDL as R/Rejected
- 970619-LD-39-SM0006 - ACID FRACTION ONLY/phenolic compounds - Qualify all analytical results <BDL as R/Rejected
- 970619-LD-24-SM0001 - ACID FRACTION ONLY/phenolic compounds - Qualify all analytical results <BDL as R/Rejected

**ORGANIC ANALYSES  
SEMIVOLATILE ORGANIC COMPOUNDS**

**COMMENTS** *Continued*

970619-LD-24-SM0002 - ACID FRACTION ONLY/phenolic compounds - Qualify all analytical results <BDL as R/Rejected  
970619-LD-24-SM0003 - ACID FRACTION ONLY/phenolic compounds - Qualify all analytical results <BDL as R/Rejected  
970619-LD-24-SM0004 - ACID FRACTION ONLY/phenolic compounds - Qualify all analytical results <BDL as R/Rejected  
970619-LD-24-SM9001 - ACID FRACTION ONLY/phenolic compounds - Qualify all analytical results <BDL as R/Rejected  
970619-LD-23-SM0001 - ACID FRACTION ONLY/phenolic compounds - Qualify all analytical results <BDL as R/Rejected  
970619-LD-23-SM0002 - ACID FRACTION ONLY/phenolic compounds - Qualify all analytical results <BDL as R/Rejected  
970619-LD-23-SM0003 - ACID FRACTION ONLY/phenolic compounds - Qualify all analytical results <BDL as R/Rejected  
970619-LD-23-SM0004 - ACID FRACTION ONLY/phenolic compounds - Qualify all analytical results <BDL as R/Rejected  
970619-LD-23-SM9001 - ACID FRACTION ONLY/phenolic compounds - Qualify all analytical results <BDL as R/Rejected

Phenolic Compounds to be qualified: Total Cresol, Pentachlorophenol, 2,4,5-Trichlorophenol, and 2,4,6-Trichlorophenol

## QA REPORTING LEVEL II REQUIREMENTS

REPORTED	
NO	YES

PERFORMANCE	
ACCEPTABLE	
NO	YES

NOT  
REQUIRED

### 1. Holding times

### A. Extraction holding time

### B. Analysis holding time

## 2. Detection limits

### 3. Blanks

### A. Extraction blanks

### B. Instrument blanks

### C. Equipment rinsate blanks

#### D. Field Blanks

#### 4. GC/ECD instrument performance check

### 5. 4,4'-DDT/Endrin breakdown

## 6. Initial calibration %RSD

### A. Retention time window calculation

### B. Peak resolution

### 6. Continuing calibration verification %D

### 7. Matrix spike (MS) %R

8. Matrix spike duplicate (MSD) %R

**9. Sample specific lab duplicate (optional)**

10. MS/MSD or lab duplicate precision (RPD)

### 11. Reagent water spike (BS)

12. Reagent water spike duplicate (BSD)

### 13. BS/BSD precision (RPD)

## 14. Surrogate spike recoveries

## 15. Pesticide cleanup checks

## 16. Compound identification and quantitation

### A. Reconstructed ion chromatograms

### B. Quantitation reports

### 17. Second column (GC/MS) confirmation

## 18. Field duplicate comparison

% RSD - percent relative standard deviation  
%D - percent difference

%R - percent recovery  
RPD - relative percent difference

BS - blank spike  
BSD - blank spike duplicate

COMMENTS:

This section was completed for TCLP method - Chlorinated Pesticides/8080. Performance was acceptable. No sample qualification was necessary.

A summary of qualified analytical results associated with this data set are presented in the attached table.

VALIDATION PERFORMED BY: Cynthia Arnold

**SIGNATURE:**

DATE:

**Summary of Qualitative Analytical Results  
for Soils, Sludges, and Waste  
ASI Data Package 84273  
Sloss Industries, Birmingham, AL**

1 of 3

G & M Sample I.D.	Analyte	Concentration Detected	Qualifier	Reasons for Qualification
ASI Laboratory Report No 84273 970619-LD-39-SM0005	Arsenic	8.8 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Zinc	600 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Cyanide	8.3 mg/Kg	J	MS/MSD 0% Rec.
	Volatiles/8260	All <BDL	UJ	Surrogate spike recoveries were out of control limit criteria
	TCLP BNA/8270	All Phenol compds <sup>(1)</sup>	R	Surrogate spike recoveries were out of control limit criteria
	Arsenic	3.8 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Zinc	1400 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Cyanide	BDL	R	MS/MSD 0% Rec.
970619-LD-39-SM0006	Volatiles/8260	All <BDL	UJ	Surrogate spike recoveries were out of control limit criteria
	TCLP BNA/8270	All Phenol compds <sup>(1)</sup>	R	Surrogate spike recoveries were out of control limit criteria
	Arsenic	18 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Zinc	3100 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Cyanide	3.8 mg/Kg	J	MS/MSD 0% Rec.
	Volatiles/8260	All <BDL	UJ	Surrogate spike recoveries were out of control limit criteria
	TCLP BNA/8270	All Phenol compds <sup>(1)</sup>	R	Surrogate spike recoveries were out of control limit criteria
	Arsenic	15 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
* 970619-LD-24-SM0001	Zinc	2900 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Cyanide	3.2 mg/Kg	J	MS/MSD 0% Rec.
	TCLP BNA/8270	All Phenol compds <sup>(1)</sup>	R	Surrogate spike recoveries were out of control limit criteria
	Arsenic	15 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Zinc	2300 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Cyanide	2.4 mg/Kg	J	MS/MSD 0% Rec.
	TCLP BNA/8270	All Phenol compds <sup>(1)</sup>	R	Surrogate spike recoveries were out of control limit criteria
	Arsenic	15 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970619-LD-24-SM0002	Zinc	2300 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Cyanide	2.4 mg/Kg	J	MS/MSD 0% Rec.
	TCLP BNA/8270	All Phenol compds <sup>(1)</sup>	R	Surrogate spike recoveries were out of control limit criteria
	Arsenic	15 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Zinc	2300 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Cyanide	2.4 mg/Kg	J	MS/MSD 0% Rec.
	TCLP BNA/8270	All Phenol compds <sup>(1)</sup>	R	Surrogate spike recoveries were out of control limit criteria
	Arsenic	15 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970619-LD-24-SM0003	Zinc	2300 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Cyanide	2.4 mg/Kg	J	MS/MSD 0% Rec.
	TCLP BNA/8270	All Phenol compds <sup>(1)</sup>	R	Surrogate spike recoveries were out of control limit criteria
	Arsenic	15 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Zinc	2300 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Cyanide	2.4 mg/Kg	J	MS/MSD 0% Rec.
	TCLP BNA/8270	All Phenol compds <sup>(1)</sup>	R	Surrogate spike recoveries were out of control limit criteria
	Arsenic	15 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria

**Summary of Qualified Analytical Results  
for Soils, Sludges, and Waste  
ASI Data Package 84273  
Sloss Industries, Birmingham, AL**

G & M Sample I.D.	Analyte	Concentration Detected	Qualifier	Reasons for Qualification
ASI Laboratory Report No 84273 970619-LD-24-SM0004	Arsenic	15 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Zinc	4500 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Cyanide	4.7 mg/Kg	J	MS/MSD 0% Rec.
	TCLP BNA/8270	All Phenol compds <sup>(1)</sup>	R	Surrogate spike recoveries were out of control limit criteri
* 970619-LD-24-SM9001	Arsenic	17 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Zinc	3000 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Cyanide	3.1 mg/Kg	J	MS/MSD 0% Rec.
	TCLP BNA/8270	All Phenol compds <sup>(1)</sup>	R	Surrogate spike recoveries were out of control limit criteri
* 970619-LD-23-SM0001	Arsenic	11 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Zinc	140 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Cyanide	20.3 mg/Kg	J	MS/MSD 0% Rec.
	TCLP BNA/8270	All Phenol compds <sup>(1)</sup>	R	Surrogate spike recoveries were out of control limit criteri
970619-LD-23-SM0002	Arsenic	11.5 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Zinc	300 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Cyanide	BDL	R	MS/MSD 0% Rec.
	TCLP BNA/8270	All Phenol compds <sup>(1)</sup>	R	Surrogate spike recoveries were out of control limit criteri
970619-LD-23-SM0003	Arsenic	42 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Zinc	280 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Cyanide	136 mg/Kg	J	MS/MSD 0% Rec.
	TCLP BNA/8270	All Phenol compds <sup>(1)</sup>	R	Surrogate spike recoveries were out of control limit criteri



**Summary of Qual. Analytical Results  
for Soils, Sludges, and Waste  
ASI Data Package 84273  
Sloss Industries, Birmingham, AL**

3 of 3

G & M Sample I.D.	Analyte	Concentration Detected	Qualifier	Reasons for Qualification
<b>ASI Laboratory Report No 84273</b> 970619-LD-23-SM0004  * 970619-LD-23-SM9001	Arsenic	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Zinc	220 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Cyanide	4.0 mg/Kg	J	MS/MSD 0% Rec.
	TCLP BNA/8270	All Phenol compds <sup>(1)</sup>	R	Surrogate spike recoveries were out of control limit criteri
	Arsenic	6.3 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Zinc	120 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Cyanide	16.1 mg/Kg	J	MS/MSD 0% Rec.
	TCLP BNA/8270	All Phenol compds <sup>(1)</sup>	R	Surrogate spike recoveries were out of control limit criteri

Notes:

U - Non-detect

UJ - Non-detected estimated

J - Estimated

R - Rejected

\* Field Duplicate pair

(1) TCLP BNA/8270 Phenolic Compound List

Total Cresol	2,4,5- Trichlorophenol
Pentachlorophenol	2,4,6- Trichlorophenol

10/16/97

0205





# ANALYTICAL SERVICES, INC.

ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

## *Master List* **ASI #84273**

Sample #	G&M ID	Analysis
84273-1	970619-LD-23-TB0001	8260
84273-2	970619-LD-23-EB0001	9010,8260,8270,Metals
84273-3	970619-LD-23-FB0001	9010,8260,8270,Metals
84273-4	970619-LD-39-SM0005	9010,8260,8270,Metals,TCLP
84273-5	970619-LD-39-SM0006	9010,8260,8270,Metals,TCLP
84273-6	970619-LD-24-SM0001	9010,8260,8270,Metals,TCLP
84273-7	970619-LD-24-SM0002	9010,8260,8270,Metals,TCLP
84273-8	970619-LD-24-SM0003	9010,8260,8270,Metals,TCLP
84273-9	970619-LD-24-SM0004	9010,8260,8270,Metals,TCLP
84273-10	970619-LD-24-SM9001	9010,8260,8270,Metals,TCLP
84273-11	970619-LD-23-SM0001	9010,8260,8270,Metals,TCLP
84273-12	970619-LD-23-SM0001MS	9010,8260,8270,Metals,TCLP
84273-13	970619-LD-23-SM0001MSD	9010,8260,8270,Metals,TCLP
84273-14	970619-LD-23-SM0002	9010,8260,8270,Metals,TCLP
84273-15	970619-LD-23-SM0003	9010,8260,8270,Metals,TCLP
84273-16	970619-LD-23-SM0004	9010,8260,8270,Metals,TCLP
84273-17	970619-LD-23-SM9001	9010,8260,8270,Metals

0207

8 July, 1997

## Case Narrative Report 84273

The samples were collected on 19 June, 1997 and received by ASI 20 June, 1997. Conditions for proper sample receipt were met. The samples were logged into the LIMS as report 84273 for the following analyses as per client request: Aqueous samples - BNA (EPA 8270), VOA (EPA 8260), Metals (EPA 6010, 7470, 7841, 7740, 7060), and CN (EPA 9010); Solid samples - BNA (EPA 8270), VOA (EPA 8260), Metals (EPA 6010, 7471, 7841, 7740, 7060), CN (EPA 9010), Moisture (ASTM D 2216), and TCLP BNA, VOA, PEST, HERB, Metals. All holding times for sample preparation and analysis were met.

BNA analysis (EPA 8270) for aqueous samples met all data quality objectives.

VOA analysis (EPA 8260) for aqueous samples met all data quality objectives.

Metals analysis (EPA 6010) for aqueous samples gave acceptable recoveries for all quality controls with the single exception that Zn had a low MSD recovery. Hg analysis (EPA 7470) met all data quality objectives. Tl analysis (EPA 7841) gave acceptable recoveries with exception of a low PDS. Se analysis (EPA 7740) gave acceptable recoveries for LCS/LCSD, but had low MS/MSD/PDS recoveries. As analysis (EPA 7060) gave low MS/MSD, but acceptable LCS/LCSD/PDS recoveries.

CN analysis (EPA 9010) for aqueous samples gave acceptable recoveries for LCS/LCSD and Duplicate RPD.

BNA analysis (EPA 8270) for solid samples gave acceptable spike and surrogate recoveries with the following exceptions: Pentachlorophenol gave low MS/MSD recoveries; Pyrene had a high MS RPD; 84273-15 gave a high recovery for 2,4,6-Tribromophenol. Dilution and reanalysis of 84273-15 gave a high recovery for 2-Fluorobiphenyl.

VOA analysis (EPA 8260) for solid samples was split into three batches. Batch #30978 gave acceptable spike and surrogate recoveries with exception that 84273-4 and 84273-5 gave high recoveries for Toluene-d8 and low recoveries for 4-Bromofluorobenzene. Sample 84273-4 was reanalyzed in batch #31017 and gave a low recovery for 4-Bromofluorobenzene. Sample 84273-5 was reanalyzed in batch #31017 and gave a high recovery for Toluene-d8 and a low recovery for 4-Bromofluorobenzene. Batch #31017 gave high MS RPD for 1,1-Dichloroethene and Toluene, and high MS/MSD recoveries for Benzene and Toluene with acceptable LCS/LCSD recoveries. Initial analysis of 84273-6 gave no usable data, so it was reanalyzed in batch #31017 giving a high recovery for Toluene-d8 and a low recovery for 4-Bromofluorobenzene. Samples 84273-7 and 84273-10 gave high recoveries for Toluene-d8 and low recoveries for

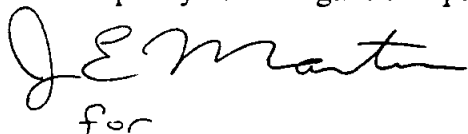
4-Bromofluorobenzene with matrix effect confirmed by analyzing these samples in duplicate. Sample 84273-15 gave a low recovery for 4-Bromofluorobenzene, but showed acceptable recoveries for all surrogates when reanalyzed. Batch #31082 gave acceptable spike and surrogate recoveries with the single exception of high MS/MSD for Toluene.

Metals analysis (EPA 6010) for solid samples gave acceptable recoveries for all quality controls with the single exception that Zn MS/MSD/PDS recoveries were low. Hg analysis (EPA 7471) was split into two batches. Both Hg batches met all data quality objectives. Tl analysis (EPA 7841) gave low recoveries for MS/MSD/PDS and acceptable LCS/LCSD. Se analysis (EPA 7740) met all data quality objectives. As analysis (EPA 7060) gave low recoveries for MS/MSD and acceptable LCS/LCSD.

CN analysis (EPA 9010) for solid samples was split into two batches. Both batches gave acceptable recoveries for LCS/LCSD and Duplicate RPD. Batch #31062 gave high recoveries for MS/MSD. Batch #31065 gave acceptable recoveries for MS/MSD.

Moisture analysis (ASTM D 2216) met all data quality objectives.

TCLP analysis for BNA gave low MS/MSD recoveries for Cresol and 2,4,6-Trichlorophenol and low MS for 2,4,5-Trichlorophenol with acceptable recoveries for LCS/LCSD. Samples 84273-4, 84273-5, 84273-6, 84273-7, 84273-8, 84273-9, 84273-11 and the MS/MSD/DUP samples were re-extracted to confirm matrix effect on the surrogates. TCLP analysis for VOA gave a low LCS recovery on 1,2-Dichloroethane, and high MS/MSD on Chloroform, 1,2-Dichloroethane, and MEK due to the TCLP matrix. All VOA surrogate recoveries were acceptable with exception that the MS/MSD sample, 84273-14, 84273-15 and the reanalysis of 84273-15 gave high recoveries on 1,2-Dichloroethane-d4. TCLP analysis for PEST met all data quality objectives. TCLP analysis for HERB met all data quality objectives. TCLP analysis for Metals was split into three batches. Batch #30526 for ICP showed a high blank value for Ba, low MS for Cd, and low MS/MSD/PDS for Pb. Batch #30535 for ICP showed a high blank for Cr, and low PDS for Ag. Batch #30922 for Hg gave a low recovery for MSD. All other Metals quality controls gave acceptable recoveries.



for  
Roy-Keith Smith, PhD  
Quality Assurance Manager



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P. Griffin

Report No.: 84273-1

July 24, 1997

### Sample Description

Sloss Industries

Water, G & M Project #TF0320.015, 970619-LD-23-TB0001,,, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

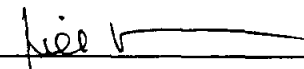
**Sample Description**

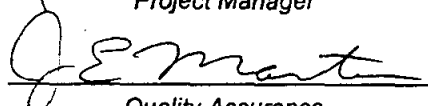
Sloss Industries

Water, G &amp; M Project #TF0320.015, 970619-LD-23-TB0001,,, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P. Griffin

Report No.: 84273-2

July 24, 1997

### Sample Description

Sloss Industries

Water, G & M Project #TF0320.015, 970619-LD-23-EB0001, 06/19/97, 14:20, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	BDL	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0212



## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970619-LD-23-EB0001, 06/19/97, 14:20, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
127184	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
95755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
95727	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970619-LD-23-EB0001, 06/19/97, 14:20, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

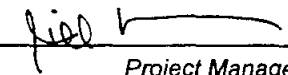
**Sample Description**

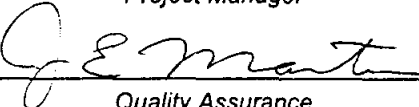
Sloss Industries

Water, G &amp; M Project #TF0320.015, 970619-LD-23-EB0001, 06/19/97, 14:20, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P. Griffin

Report No.: 84273-3

July 24, 1997

### Sample Description

Sloss Industries

Water, G & M Project #TF0320.015, 970619-LD-23-FB0001, 06/19/97, 14:10, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	BDL	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 826
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0216

## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970619-LD-23-FB0001, 06/19/97, 14:10, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
127184	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
99755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
1027	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

0217

## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970619-LD-23-FB0001, 06/19/97, 14:10, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

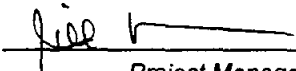
**Sample Description**

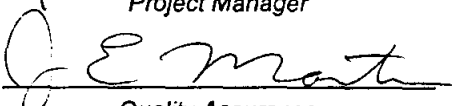
Sloss Industries

Water, G &amp; M Project #TF0320.015, 970619-LD-23-FB0001, 06/19/97, 14:10, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P. Griffin

Report No.: 84273-4

July 24, 1997

### Sample Description

Sloss Industries

Sludge, G & M Project #TF0320.015, 970619-LD-39-SM0005, 06/19/97, 17:10, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
	Moisture	18.5	0.02	%		1	
57125	Total Cyanide	8.3	0.3	mg/kg		1	EPA 9010A
Priority Pollutant Metals							
Metals							
7440360	Total Antimony	15	6.1	mg/kg		1	EPA 6010A
7440382	Total Arsenic	8.8	1.2	mg/kg		1	EPA 7060A
7440393	Total Barium	200	1.2	mg/kg		1	EPA 6010A
7440417	Total Beryllium	BDL	0.6	mg/kg		1	EPA 6010A
7440439	Total Cadmium	6.5	0.6	mg/kg		1	EPA 6010A
7440473	Total Chromium	BDL	1.2	mg/kg		1	EPA 6010A
7440508	Total Copper	BDL	2.5	mg/kg		1	EPA 6010A
7439921	Total Lead	30	3.1	mg/kg		1	EPA 6010A
7439976	Total Mercury	BDL	0.306	mg/kg		1	EPA 7471
7440020	Total Nickel	12	2.5	mg/kg		1	EPA 6010A
7782492	Total Selenium	BDL	4.9	mg/kg		1	EPA 7740
7440224	Total Silver	BDL	1.2	mg/kg		1	EPA 6010A
7440280	Total Thallium	BDL	4.9	mg/kg		1	EPA 7841
7440666	Total Zinc	600	2.5	mg/kg		1	EPA 6010A
Volatile Organics (EPA 8260A)							
67641	Acetone	BDL	61	ug/kg		1	EPA 8260A
107028	Acrolein	BDL	61	ug/kg		1	EPA 8260A
107131	Acrylonitrile	BDL	61	ug/kg		1	EPA 8260A
71432	Benzene	BDL	6	ug/kg		1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg		1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg		1	EPA 8260A
74839	Bromomethane	BDL	12	ug/kg		1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg		1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg		1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg		1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg		1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg		1	EPA 8260A
74873	Chloromethane	BDL	12	ug/kg		1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	12	ug/kg		1	EPA 8260A

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

0220

Page 1 of 5



## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-39-SM0005, 06/19/97, 17:10, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg		1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg		1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg		1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	12	ug/kg		1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg		1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg		1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg		1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg		1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg		1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg		1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg		1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg		1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg		1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg		1	EPA 8260A
591786	2-Hexanone	BDL	61	ug/kg		1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg		1	EPA 8260A
78933	2-Butanone	BDL	61	ug/kg		1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg		1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	61	ug/kg		1	EPA 8260A
425	Styrene	BDL	6	ug/kg		1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg		1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg		1	EPA 8260A
108883	Toluene	BDL	6	ug/kg		1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg		1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg		1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg		1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg		1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg		1	EPA 8260A
108054	Vinyl acetate	BDL	12	ug/kg		1	EPA 8260A
75014	Vinyl chloride	BDL	12	ug/kg		1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg		1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>							
59507	4-Chloro-3-methylphenol	BDL	410	ug/kg		1	EPA 8270B
95578	2-Chlorophenol	BDL	410	ug/kg		1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	410	ug/kg		1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	410	ug/kg		1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	410	ug/kg		1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2100	ug/kg		1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2100	ug/kg		1	EPA 8270B
95487	2-Methylphenol	BDL	410	ug/kg		1	EPA 8270B
108394	3-Methylphenol	BDL	410	ug/kg		1	EPA 8270B
106445	4-Methylphenol	BDL	410	ug/kg		1	EPA 8270B
55	2-Nitrophenol	BDL	410	ug/kg		1	EPA 8270B
100027	4-Nitrophenol	BDL	2100	ug/kg		1	EPA 8270B
87865	Pentachlorophenol	BDL	410	ug/kg		1	EPA 8270B
108952	Phenol	BDL	410	ug/kg		1	EPA 8270B

BDL - Below Detection Limits

0221

**Sample Description**

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-39-SM0005, 06/19/97, 17:10, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	410	ug/kg		1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	410	ug/kg		1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2100	ug/kg		1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>							
83329	Acenaphthene	BDL	410	ug/kg		1	EPA 8270B
208968	Acenaphthylene	BDL	410	ug/kg		1	EPA 8270B
120127	Anthracene	BDL	410	ug/kg		1	EPA 8270B
56553	Benzo(a)anthracene	BDL	410	ug/kg		1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	410	ug/kg		1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	410	ug/kg		1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	410	ug/kg		1	EPA 8270B
50328	Benzo(a)pyrene	BDL	410	ug/kg		1	EPA 8270B
100516	Benzyl Alcohol	BDL	410	ug/kg		1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	410	ug/kg		1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	410	ug/kg		1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	410	ug/kg		1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	410	ug/kg		1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	410	ug/kg		1	EPA 8270B
106478	p-Chloroaniline	BDL	410	ug/kg		1	EPA 8270B
91587	2-Chloronaphthalene	BDL	410	ug/kg		1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	410	ug/kg		1	EPA 8270B
218019	Chrysene	BDL	410	ug/kg		1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	410	ug/kg		1	EPA 8270B
132649	Dibenzofuran	BDL	410	ug/kg		1	EPA 8270B
84742	Di-n-butylphthalate	BDL	410	ug/kg		1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	410	ug/kg		1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	410	ug/kg		1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	410	ug/kg		1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2100	ug/kg		1	EPA 8270B
84662	Diethylphthalate	BDL	410	ug/kg		1	EPA 8270B
131113	Dimethylphthalate	BDL	410	ug/kg		1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	410	ug/kg		1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	410	ug/kg		1	EPA 8270B
117840	Di-n-octylphthalate	BDL	410	ug/kg		1	EPA 8270B
206440	Fluoranthene	BDL	410	ug/kg		1	EPA 8270B
86737	Fluorene	BDL	410	ug/kg		1	EPA 8270B
118741	Hexachlorobenzene	BDL	410	ug/kg		1	EPA 8270B
87683	Hexachlorobutadiene	BDL	410	ug/kg		1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	410	ug/kg		1	EPA 8270B
67721	Hexachloroethane	BDL	410	ug/kg		1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	410	ug/kg		1	EPA 8270B
78591	Isophorone	BDL	410	ug/kg		1	EPA 8270B
91576	2-Methylnaphthalene	BDL	410	ug/kg		1	EPA 8270B
91203	Naphthalene	BDL	410	ug/kg		1	EPA 8270B
88744	2-Nitroaniline	BDL	410	ug/kg		1	EPA 8270B
99092	3-Nitroaniline	BDL	410	ug/kg		1	EPA 8270B

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

0222

## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-39-SM0005, 06/19/97, 17:10, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	410	ug/kg		1	EPA 8270B
98953	Nitrobenzene	BDL	410	ug/kg		1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	410	ug/kg		1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	410	ug/kg		1	EPA 8270B
85018	Phenanthrene	BDL	410	ug/kg		1	EPA 8270B
129000	Pyrene	BDL	410	ug/kg		1	EPA 8270B
110861	Pyridine	BDL	410	ug/kg		1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	410	ug/kg		1	EPA 8270B
<b>Toxicity Characteristic Leaching Procedure (EPA 1311)</b>							
7440382	D004 Arsenic	BDL	2.5	mg/l	5.0	1	EPA 1311
7440393	D005 Barium	1.3	0.3	mg/l	100.0	1	EPA 1311
7440439	D006 Cadmium	BDL	0.01	mg/l	1.0	1	EPA 1311
5103719	D020 alpha-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
5564347	D020 gamma-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
7440473	D007 Chromium	BDL	0.01	mg/l	5.0	1	EPA 1311
	D026 Total Cresol	BDL	0.05	mg/l	200.0	1	EPA 1311
94757	D016 2,4-D	BDL	0.05	mg/l	10.0	1	EPA 1311
106467	D027 1,4-Dichlorobenzene	BDL	0.05	mg/l	7.5	1	EPA 1311
121142	D030 2,4-Dinitrotoluene	BDL	0.05	mg/l	0.13	1	EPA 1311
108	D012 Endrin	BDL	0.001	mg/l	0.02	1	EPA 1311
76448	D031 Heptachlor	BDL	0.001	mg/l	0.008	1	EPA 1311
1024573	D031 Heptachlor epoxide	BDL	0.001	mg/l	0.008	1	EPA 1311
118741	D032 Hexachlorobenzene	BDL	0.05	mg/l	0.13	1	EPA 1311
87683	D033 Hexachlorobutadiene	BDL	0.05	mg/l	0.5	1	EPA 1311
67721	D034 Hexachloroethane	BDL	0.05	mg/l	3.0	1	EPA 1311
7439921	D008 Lead	BDL	0.1	mg/l	5.0	1	EPA 1311
58899	D013 Lindane	BDL	0.01	mg/l	0.4	1	EPA 1311
7439976	D009 Mercury	BDL	0.005	mg/l	0.2	1	EPA 1311
72435	D014 Methoxychlor	BDL	0.50	mg/l	10.0	1	EPA 1311
98953	D036 Nitrobenzene	BDL	0.05	mg/l	2.0	1	EPA 1311
87865	D037 Pentachlorophenol	BDL	0.05	mg/l	100.0	1	EPA 1311
7782492	D010 Selenium	BDL	0.5	mg/l	1.0	1	EPA 1311
7440224	D011 Silver	BDL	0.01	mg/l	5.0	1	EPA 1311
8001352	D015 Toxaphene	BDL	0.05	mg/l	0.5	1	EPA 1311
95954	D041 2,4,5-Trichlorophenol	BDL	0.05	mg/l	400.0	1	EPA 1311
88062	D042 2,4,6-Trichlorophenol	BDL	0.05	mg/l	2.0	1	EPA 1311
93721	D017 2,4,5-TP Silvex	BDL	0.1	mg/l	1.0	1	EPA 1311
110861	D038 Pyridine	BDL	0.05	mg/l	5.0	1	EPA 1311
<b>Zero Headspace Extraction (ZHE)</b>							
71432	D018 Benzene	BDL	0.02	mg/l	0.5	1	EPA 1311
56235	D019 Carbon tetrachloride	BDL	0.02	mg/l	0.5	1	EPA 1311
108907	D021 Chlorobenzene	BDL	0.02	mg/l	100.0	1	EPA 1311
53	D022 Chloroform	BDL	0.02	mg/l	6.0	1	EPA 1311
107062	D028 1,2-Dichloroethane	BDL	0.02	mg/l	0.5	1	EPA 1311
75354	D029 1,1-Dichloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
78933	D035 Methyl ethyl ketone	BDL	0.5	mg/l	200.0	1	EPA 1311

BDL - Below Detection Limits

0223


**Sample Description**

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-39-SM0005, 06/19/97, 17:10, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
127184	D039 Tetrachloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
79016	D040 Trichloroethene	BDL	0.02	mg/l	0.5	1	EPA 1311
75014	D043 Vinyl chloride	BDL	0.02	mg/l	0.2	1	EPA 1311

Respectfully submitted,



Project Manager



Quality Assurance



# ANALYTICAL SERVICES, INC.

## Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

### Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P. Griffin  
Report No.: 84273-5

July 24, 1997

### Sample Description

Sloss Industries

Sludge, G & M Project #TF0320.015, 970619-LD-39-SM0006, 06/19/97, 17:25, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
57125	Moisture	21.2	0.03	%		1	
	Total Cyanide	BDL	0.2	mg/kg		1	EPA 9010A
Priority Pollutant Metals							
Metals							
7440360	Total Antimony	11	6.3	mg/kg		1	EPA 6010A
7440382	Total Arsenic	3.8	1.3	mg/kg		1	EPA 7060A
7440393	Total Barium	85	1.3	mg/kg		1	EPA 6010A
7440417	Total Beryllium	BDL	0.6	mg/kg		1	EPA 6010A
7440439	Total Cadmium	5.0	0.6	mg/kg		1	EPA 6010A
7440473	Total Chromium	BDL	1.3	mg/kg		1	EPA 6010A
7440508	Total Copper	7.2	2.5	mg/kg		1	EPA 6010A
7439921	Total Lead	320	3.1	mg/kg		1	EPA 6010A
7439976	Total Mercury	BDL	0.317	mg/kg		1	EPA 7471
7440020	Total Nickel	9.6	2.5	mg/kg		1	EPA 6010A
7782492	Total Selenium	BDL	5.1	mg/kg		1	EPA 7740
7440224	Total Silver	BDL	1.3	mg/kg		1	EPA 6010A
7440280	Total Thallium	BDL	5.1	mg/kg		1	EPA 7841
7440666	Total Zinc	1400	2.5	mg/kg		1	EPA 6010A
Volatile Organics (EPA 8260A)							
67641	Acetone	BDL	63	ug/kg		1	EPA 8260A
107028	Acrolein	BDL	63	ug/kg		1	EPA 8260A
107131	Acrylonitrile	BDL	63	ug/kg		1	EPA 8260A
71432	Benzene	BDL	6	ug/kg		1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg		1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg		1	EPA 8260A
74839	Bromomethane	BDL	13	ug/kg		1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg		1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg		1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg		1	EPA 8260A
75	Chloroethane	BDL	6	ug/kg		1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg		1	EPA 8260A
74873	Chloromethane	BDL	13	ug/kg		1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	13	ug/kg		1	EPA 8260A

BDL - Below Detection Limits

0225

## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-39-SM0006, 06/19/97, 17:25, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg		1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg		1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg		1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	13	ug/kg		1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg		1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg		1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg		1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg		1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg		1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg		1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg		1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg		1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg		1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg		1	EPA 8260A
591786	2-Hexanone	BDL	63	ug/kg		1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg		1	EPA 8260A
78933	2-Butanone	BDL	63	ug/kg		1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg		1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	63	ug/kg		1	EPA 8260A
100425	Styrene	BDL	6	ug/kg		1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg		1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg		1	EPA 8260A
108883	Toluene	BDL	6	ug/kg		1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg		1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg		1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg		1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg		1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg		1	EPA 8260A
108054	Vinyl acetate	BDL	13	ug/kg		1	EPA 8260A
75014	Vinyl chloride	BDL	13	ug/kg		1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg		1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>							
59507	4-Chloro-3-methylphenol	BDL	420	ug/kg		1	EPA 8270B
95578	2-Chlorophenol	BDL	420	ug/kg		1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	420	ug/kg		1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	420	ug/kg		1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	420	ug/kg		1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2200	ug/kg		1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2200	ug/kg		1	EPA 8270B
95487	2-Methylphenol	BDL	420	ug/kg		1	EPA 8270B
108394	3-Methylphenol	BDL	420	ug/kg		1	EPA 8270B
106445	4-Methylphenol	BDL	420	ug/kg		1	EPA 8270B
88755	2-Nitrophenol	BDL	420	ug/kg		1	EPA 8270B
100027	4-Nitrophenol	BDL	2200	ug/kg		1	EPA 8270B
87865	Pentachlorophenol	BDL	420	ug/kg		1	EPA 8270B
108952	Phenol	BDL	420	ug/kg		1	EPA 8270B

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-39-SM0006, 06/19/97, 17:25, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	420	ug/kg		1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	420	ug/kg		1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2200	ug/kg		1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>							
83329	Acenaphthene	BDL	420	ug/kg		1	EPA 8270B
208968	Acenaphthylene	BDL	420	ug/kg		1	EPA 8270B
120127	Anthracene	BDL	420	ug/kg		1	EPA 8270B
56553	Benzo(a)anthracene	BDL	420	ug/kg		1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	420	ug/kg		1	EPA 8270B
207089	Benzo(k)fluoranthene	630	420	ug/kg		1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	420	ug/kg		1	EPA 8270B
50328	Benzo(a)pyrene	BDL	420	ug/kg		1	EPA 8270B
100516	Benzyl Alcohol	BDL	420	ug/kg		1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	420	ug/kg		1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	420	ug/kg		1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	420	ug/kg		1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	420	ug/kg		1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	420	ug/kg		1	EPA 8270B
106478	p-Chloroaniline	BDL	420	ug/kg		1	EPA 8270B
37	2-Chloronaphthalene	BDL	420	ug/kg		1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	420	ug/kg		1	EPA 8270B
218019	Chrysene	BDL	420	ug/kg		1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	420	ug/kg		1	EPA 8270B
132649	Dibenzofuran	BDL	420	ug/kg		1	EPA 8270B
84742	Di-n-butylphthalate	BDL	420	ug/kg		1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	420	ug/kg		1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	420	ug/kg		1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	420	ug/kg		1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2200	ug/kg		1	EPA 8270B
84662	Diethylphthalate	BDL	420	ug/kg		1	EPA 8270B
131113	Dimethylphthalate	BDL	420	ug/kg		1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	420	ug/kg		1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	420	ug/kg		1	EPA 8270B
117840	Di-n-octylphthalate	BDL	420	ug/kg		1	EPA 8270B
206440	Fluoranthene	BDL	420	ug/kg		1	EPA 8270B
86737	Fluorene	BDL	420	ug/kg		1	EPA 8270B
118741	Hexachlorobenzene	BDL	420	ug/kg		1	EPA 8270B
87683	Hexachlorobutadiene	BDL	420	ug/kg		1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	420	ug/kg		1	EPA 8270B
67721	Hexachloroethane	BDL	420	ug/kg		1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	420	ug/kg		1	EPA 8270B
78591	Isophorone	BDL	420	ug/kg		1	EPA 8270B
76	2-Methylnaphthalene	BDL	420	ug/kg		1	EPA 8270B
91203	Naphthalene	BDL	420	ug/kg		1	EPA 8270B
88744	2-Nitroaniline	BDL	420	ug/kg		1	EPA 8270B
99092	3-Nitroaniline	BDL	420	ug/kg		1	EPA 8270B

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-39-SM0006, 06/19/97, 17:25, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	420	ug/kg		1	EPA 8270B
98953	Nitrobenzene	BDL	420	ug/kg		1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	420	ug/kg		1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	420	ug/kg		1	EPA 8270B
85018	Phenanthrene	BDL	420	ug/kg		1	EPA 8270B
129000	Pyrene	BDL	420	ug/kg		1	EPA 8270B
110861	Pyridine	BDL	420	ug/kg		1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	420	ug/kg		1	EPA 8270B
Toxicity Characteristic Leaching Procedure (EPA 1311)							
7440382	D004 Arsenic	BDL	2.5	mg/l	5.0	1	EPA 1311
7440393	D005 Barium	BDL	0.3	mg/l	100.0	1	EPA 1311
7440439	D006 Cadmium	BDL	0.01	mg/l	1.0	1	EPA 1311
5103719	D020 alpha-Chlordane	BDL	0.010	mg/l	0.03	1	EPA 1311
5564347	D020 gamma-Chlordane	BDL	0.010	mg/l	0.03	1	EPA 1311
7440473	D007 Chromium	BDL	0.01	mg/l	5.0	1	EPA 1311
	D026 Total Cresol	BDL	0.050	mg/l	200.0	1	EPA 1311
94757	D016 2,4-D	BDL	0.050	mg/l	10.0	1	EPA 1311
106467	D027 1,4-Dichlorobenzene	BDL	0.050	mg/l	7.5	1	EPA 1311
121142	D030 2,4-Dinitrotoluene	BDL	0.050	mg/l	0.13	1	EPA 1311
72208	D012 Endrin	BDL	0.001	mg/l	0.02	1	EPA 1311
76448	D031 Heptachlor	BDL	0.001	mg/l	0.008	1	EPA 1311
1024573	D031 Heptachlor epoxide	BDL	0.001	mg/l	0.008	1	EPA 1311
118741	D032 Hexachlorobenzene	BDL	0.050	mg/l	0.13	1	EPA 1311
87683	D033 Hexachlorobutadiene	BDL	0.050	mg/l	0.5	1	EPA 1311
67721	D034 Hexachloroethane	BDL	0.050	mg/l	3.0	1	EPA 1311
7439921	D008 Lead	BDL	0.1	mg/l	5.0	1	EPA 1311
58899	D013 Lindane	BDL	0.010	mg/l	0.4	1	EPA 1311
7439976	D009 Mercury	BDL	0.005	mg/l	0.2	1	EPA 1311
72435	D014 Methoxychlor	BDL	0.50	mg/l	10.0	1	EPA 1311
98953	D036 Nitrobenzene	BDL	0.050	mg/l	2.0	1	EPA 1311
87865	D037 Pentachlorophenol	BDL	0.050	mg/l	100.0	1	EPA 1311
7782492	D010 Selenium	BDL	0.5	mg/l	1.0	1	EPA 1311
7440224	D011 Silver	BDL	0.01	mg/l	5.0	1	EPA 1311
8001352	D015 Toxaphene	BDL	0.050	mg/l	0.5	1	EPA 1311
95954	D041 2,4,5-Trichlorophenol	BDL	0.050	mg/l	400.0	1	EPA 1311
88062	D042 2,4,6-Trichlorophenol	BDL	0.050	mg/l	2.0	1	EPA 1311
93721	D017 2,4,5-TP Silvex	BDL	0.10	mg/l	1.0	1	EPA 1311
110861	D038 Pyridine	BDL	0.050	mg/l	5.0	1	EPA 1311
Zero Headspace Extraction (ZHE)							
71432	D018 Benzene	BDL	0.02	mg/l	0.5	1	EPA 1311
56235	D019 Carbon tetrachloride	BDL	0.02	mg/l	0.5	1	EPA 1311
108907	D021 Chlorobenzene	BDL	0.02	mg/l	100.0	1	EPA 1311
67663	D022 Chloroform	BDL	0.02	mg/l	6.0	1	EPA 1311
107062	D028 1,2-Dichloroethane	BDL	0.02	mg/l	0.5	1	EPA 1311
75354	D029 1,1-Dichloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
78933	D035 Methyl ethyl ketone	BDL	0.5	mg/l	200.0	1	EPA 1311

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis



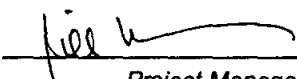
## Sample Description

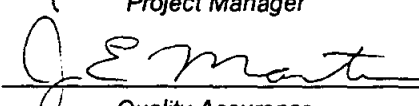
Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-39-SM0006, 06/19/97, 17:25, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
127184	D039 Tetrachloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
79016	D040 Trichloroethene	BDL	0.02	mg/l	0.5	1	EPA 1311
75014	D043 Vinyl chloride	BDL	0.02	mg/l	0.2	1	EPA 1311

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P. Griffin

Report No.: 84273-6

July 24, 1997

### Sample Description

Sloss Industries

Sludge, G & M Project #TF0320.015, 970619-LD-24-SM0001, 06/19/97, 10:50, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
	Moisture	17.8	0.03	%		1	
57125	Total Cyanide	3.8	0.2	mg/kg		1	EPA 9010A
<b>Priority Pollutant Metals</b>							
<b>Metals</b>							
7440360	Total Antimony	17	6.1	mg/kg		1	EPA 6010A
7440382	Total Arsenic	18	1.2	mg/kg		1	EPA 7060A
7440393	Total Barium	200	1.2	mg/kg		1	EPA 6010A
7440417	Total Beryllium	2.4	0.6	mg/kg		1	EPA 6010A
7440439	Total Cadmium	8.7	0.6	mg/kg		1	EPA 6010A
7440473	Total Chromium	120	1.2	mg/kg		1	EPA 6010A
7440508	Total Copper	110	2.4	mg/kg		1	EPA 6010A
7439921	Total Lead	310	3.0	mg/kg		1	EPA 6010A
7439976	Total Mercury	BDL	0.304	mg/kg		1	EPA 7471
7440020	Total Nickel	36	2.4	mg/kg		1	EPA 6010A
7782492	Total Selenium	BDL	4.9	mg/kg		1	EPA 7740
7440224	Total Silver	4.3	1.2	mg/kg		1	EPA 6010A
7440280	Total Thallium	BDL	4.9	mg/kg		1	EPA 7841
7440666	Total Zinc	3100	2.4	mg/kg		1	EPA 6010A
<b>Volatile Organics (EPA 8260A)</b>							
67641	Acetone	BDL	61	ug/kg		1	EPA 8260A
107028	Acrolein	BDL	61	ug/kg		1	EPA 8260A
107131	Acrylonitrile	BDL	61	ug/kg		1	EPA 8260A
71432	Benzene	BDL	6	ug/kg		1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg		1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg		1	EPA 8260A
74839	Bromomethane	BDL	12	ug/kg		1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg		1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg		1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg		1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg		1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg		1	EPA 8260A
74873	Chloromethane	BDL	12	ug/kg		1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	12	ug/kg		1	EPA 8260A

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

0230

## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-24-SM0001, 06/19/97, 10:50, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg		1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg		1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg		1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	12	ug/kg		1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg		1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg		1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg		1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg		1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg		1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg		1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg		1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg		1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg		1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg		1	EPA 8260A
591786	2-Hexanone	BDL	61	ug/kg		1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg		1	EPA 8260A
78933	2-Butanone	BDL	61	ug/kg		1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg		1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	61	ug/kg		1	EPA 8260A
425	Styrene	BDL	6	ug/kg		1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg		1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg		1	EPA 8260A
108883	Toluene	BDL	6	ug/kg		1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg		1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg		1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg		1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg		1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg		1	EPA 8260A
108054	Vinyl acetate	BDL	12	ug/kg		1	EPA 8260A
75014	Vinyl chloride	BDL	12	ug/kg		1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg		1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>							
59507	4-Chloro-3-methylphenol	BDL	400	ug/kg		1	EPA 8270B
95578	2-Chlorophenol	BDL	400	ug/kg		1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	400	ug/kg		1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	400	ug/kg		1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	400	ug/kg		1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2100	ug/kg		1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2100	ug/kg		1	EPA 8270B
95487	2-Methylphenol	BDL	400	ug/kg		1	EPA 8270B
108394	3-Methylphenol	BDL	400	ug/kg		1	EPA 8270B
106445	4-Methylphenol	BDL	400	ug/kg		1	EPA 8270B
55	2-Nitrophenol	BDL	400	ug/kg		1	EPA 8270B
100027	4-Nitrophenol	BDL	2100	ug/kg		1	EPA 8270B
87865	Pentachlorophenol	BDL	400	ug/kg		1	EPA 8270B
108952	Phenol	BDL	400	ug/kg		1	EPA 8270B

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-24-SM0001, 06/19/97, 10:50, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	400	ug/kg		1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	400	ug/kg		1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2100	ug/kg		1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>							
83329	Acenaphthene	BDL	400	ug/kg		1	EPA 8270B
208968	Acenaphthylene	BDL	400	ug/kg		1	EPA 8270B
120127	Anthracene	BDL	400	ug/kg		1	EPA 8270B
56553	Benzo(a)anthracene	BDL	400	ug/kg		1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	400	ug/kg		1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	400	ug/kg		1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	400	ug/kg		1	EPA 8270B
50328	Benzo(a)pyrene	BDL	400	ug/kg		1	EPA 8270B
100516	Benzyl Alcohol	BDL	400	ug/kg		1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	400	ug/kg		1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	400	ug/kg		1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	400	ug/kg		1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	400	ug/kg		1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	400	ug/kg		1	EPA 8270B
106478	p-Chloroaniline	BDL	400	ug/kg		1	EPA 8270B
91587	2-Chloronaphthalene	BDL	400	ug/kg		1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	400	ug/kg		1	EPA 8270B
218019	Chrysene	BDL	400	ug/kg		1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	400	ug/kg		1	EPA 8270B
132649	Dibenzofuran	BDL	400	ug/kg		1	EPA 8270B
84742	Di-n-butylphthalate	BDL	400	ug/kg		1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	400	ug/kg		1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	400	ug/kg		1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	400	ug/kg		1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2100	ug/kg		1	EPA 8270B
84662	Diethylphthalate	BDL	400	ug/kg		1	EPA 8270B
131113	Dimethylphthalate	BDL	400	ug/kg		1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	400	ug/kg		1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	400	ug/kg		1	EPA 8270B
117840	Di-n-octylphthalate	BDL	400	ug/kg		1	EPA 8270B
206440	Fluoranthene	BDL	400	ug/kg		1	EPA 8270B
86737	Fluorene	BDL	400	ug/kg		1	EPA 8270B
118741	Hexachlorobenzene	BDL	400	ug/kg		1	EPA 8270B
87683	Hexachlorobutadiene	BDL	400	ug/kg		1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	400	ug/kg		1	EPA 8270B
67721	Hexachloroethane	BDL	400	ug/kg		1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	400	ug/kg		1	EPA 8270B
78591	Isophorone	BDL	400	ug/kg		1	EPA 8270B
91576	2-Methylnaphthalene	BDL	400	ug/kg		1	EPA 8270B
91203	Naphthalene	BDL	400	ug/kg		1	EPA 8270B
88744	2-Nitroaniline	BDL	400	ug/kg		1	EPA 8270B
99092	3-Nitroaniline	BDL	400	ug/kg		1	EPA 8270B

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

0232

**Sample Description**

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-24-SM0001, 06/19/97, 10:50, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	400	ug/kg		1	EPA 8270B
98953	Nitrobenzene	BDL	400	ug/kg		1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	400	ug/kg		1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	400	ug/kg		1	EPA 8270B
85018	Phenanthrene	BDL	400	ug/kg		1	EPA 8270B
129000	Pyrene	BDL	400	ug/kg		1	EPA 8270B
110861	Pyridine	BDL	400	ug/kg		1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	400	ug/kg		1	EPA 8270B
<b>Toxicity Characteristic Leaching Procedure (EPA 1311)</b>							
7440382	D004 Arsenic	BDL	2.5	mg/l	5.0	1	EPA 1311
7440393	D005 Barium	1.0	0.3	mg/l	100.0	1	EPA 1311
7440439	D006 Cadmium	0.03	0.01	mg/l	1.0	1	EPA 1311
5103719	D020 alpha-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
5564347	D020 gamma-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
7440473	D007 Chromium	BDL	0.01	mg/l	5.0	1	EPA 1311
	D026 Total Cresol	BDL	0.05	mg/l	200.0	1	EPA 1311
94757	D016 2,4-D	BDL	0.05	mg/l	10.0	1	EPA 1311
106467	D027 1,4-Dichlorobenzene	BDL	0.05	mg/l	7.5	1	EPA 1311
101142	D030 2,4-Dinitrotoluene	BDL	0.05	mg/l	0.13	1	EPA 1311
101142	D012 Endrin	BDL	0.001	mg/l	0.02	1	EPA 1311
76448	D031 Heptachlor	BDL	0.001	mg/l	0.008	1	EPA 1311
1024573	D031 Heptachlor epoxide	BDL	0.001	mg/l	0.008	1	EPA 1311
118741	D032 Hexachlorobenzene	BDL	0.05	mg/l	0.13	1	EPA 1311
87683	D033 Hexachlorobutadiene	BDL	0.05	mg/l	0.5	1	EPA 1311
67721	D034 Hexachloroethane	BDL	0.05	mg/l	3.0	1	EPA 1311
7439921	D008 Lead	BDL	0.1	mg/l	5.0	1	EPA 1311
58899	D013 Lindane	BDL	0.01	mg/l	0.4	1	EPA 1311
7439976	D009 Mercury	BDL	0.005	mg/l	0.2	1	EPA 1311
72435	D014 Methoxychlor	BDL	0.5	mg/l	10.0	1	EPA 1311
98953	D036 Nitrobenzene	BDL	0.05	mg/l	2.0	1	EPA 1311
87865	D037 Pentachlorophenol	BDL	0.05	mg/l	100.0	1	EPA 1311
7782492	D010 Selenium	BDL	0.5	mg/l	1.0	1	EPA 1311
7440224	D011 Silver	BDL	0.01	mg/l	5.0	1	EPA 1311
8001352	D015 Toxaphene	BDL	0.05	mg/l	0.5	1	EPA 1311
95954	D041 2,4,5-Trichlorophenol	BDL	0.05	mg/l	400.0	1	EPA 1311
88062	D042 2,4,6-Trichlorophenol	BDL	0.05	mg/l	2.0	1	EPA 1311
93721	D017 2,4,5-TP Silvex	BDL	0.1	mg/l	1.0	1	EPA 1311
110861	D038 Pyridine	BDL	0.05	mg/l	5.0	1	EPA 1311
<b>Zero Headspace Extraction (ZHE)</b>							
71432	D018 Benzene	BDL	0.02	mg/l	0.5	1	EPA 1311
56235	D019 Carbon tetrachloride	BDL	0.02	mg/l	0.5	1	EPA 1311
108907	D021 Chlorobenzene	BDL	0.02	mg/l	100.0	1	EPA 1311
108907	D022 Chloroform	BDL	0.02	mg/l	6.0	1	EPA 1311
107062	D028 1,2-Dichloroethane	BDL	0.02	mg/l	0.5	1	EPA 1311
75354	D029 1,1-Dichloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
78933	D035 Methyl ethyl ketone	BDL	0.5	mg/l	200.0	1	EPA 1311

BDL - Below Detection Limits

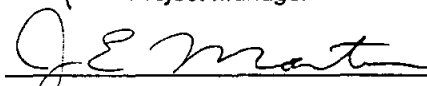
**Sample Description**

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-24-SM0001, 06/19/97, 10:50, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
127184	D039 Tetrachloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
79016	D040 Trichloroethene	BDL	0.02	mg/l	0.5	1	EPA 1311
75014	D043 Vinyl chloride	BDL	0.02	mg/l	0.2	1	EPA 1311

Respectfully submitted,

  
Project Manager  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway Norcross, GA 30092  
(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P. Griffin  
Report No.: 84273-7

July 24, 1997

### Sample Description

Sloss Industries

Sludge, G & M Project #TF0320.015, 970619-LD-24-SM0002, 06/19/97, 11:20, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
	Moisture	15.1	0.03	%		1	
57125	Total Cyanide	3.2	0.2	mg/kg		1	EPA 9010A
Priority Pollutant Metals							
Metals							
7440360	Total Antimony	18	5.9	mg/kg		1	EPA 6010A
7440382	Total Arsenic	15	1.2	mg/kg		1	EPA 7060A
10393	Total Barium	240	1.2	mg/kg		1	EPA 6010A
7440417	Total Beryllium	2.4	0.6	mg/kg		1	EPA 6010A
7440439	Total Cadmium	7.9	0.6	mg/kg		1	EPA 6010A
7440473	Total Chromium	180	1.2	mg/kg		1	EPA 6010A
7440508	Total Copper	85	2.4	mg/kg		1	EPA 6010A
7439921	Total Lead	240	2.9	mg/kg		1	EPA 6010A
7439976	Total Mercury	BDL	0.294	mg/kg		1	EPA 7471
7440020	Total Nickel	43	2.4	mg/kg		1	EPA 6010A
7782492	Total Selenium	BDL	4.7	mg/kg		1	EPA 7740
7440224	Total Silver	2.9	1.2	mg/kg		1	EPA 6010A
7440280	Total Thallium	BDL	4.7	mg/kg		1	EPA 7841
7440666	Total Zinc	2900	2.4	mg/kg		1	EPA 6010A
Volatile Organics (EPA 8260A)							
67641	Acetone	BDL	59	ug/kg		1	EPA 8260A
107028	Acrolein	BDL	59	ug/kg		1	EPA 8260A
107131	Acrylonitrile	BDL	59	ug/kg		1	EPA 8260A
71432	Benzene	BDL	6	ug/kg		1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg		1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg		1	EPA 8260A
74839	Bromomethane	BDL	12	ug/kg		1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg		1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg		1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg		1	EPA 8260A
103	Chloroethane	BDL	6	ug/kg		1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg		1	EPA 8260A
74873	Chloromethane	BDL	12	ug/kg		1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	12	ug/kg		1	EPA 8260A

BDL - Below Detection Limits

## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-24-SM0002, 06/19/97, 11:20, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg		1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg		1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg		1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	12	ug/kg		1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg		1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg		1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg		1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg		1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg		1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg		1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg		1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg		1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg		1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg		1	EPA 8260A
591786	2-Hexanone	BDL	59	ug/kg		1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg		1	EPA 8260A
78933	2-Butanone	BDL	59	ug/kg		1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg		1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	59	ug/kg		1	EPA 8260A
100425	Styrene	BDL	6	ug/kg		1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg		1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg		1	EPA 8260A
108883	Toluene	BDL	6	ug/kg		1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg		1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg		1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg		1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg		1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg		1	EPA 8260A
108054	Vinyl acetate	BDL	12	ug/kg		1	EPA 8260A
75014	Vinyl chloride	BDL	12	ug/kg		1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg		1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>							
59507	4-Chloro-3-methylphenol	BDL	390	ug/kg		1	EPA 8270B
95578	2-Chlorophenol	BDL	390	ug/kg		1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	390	ug/kg		1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	390	ug/kg		1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	390	ug/kg		1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2000	ug/kg		1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2000	ug/kg		1	EPA 8270B
95487	2-Methylphenol	BDL	390	ug/kg		1	EPA 8270B
108394	3-Methylphenol	BDL	390	ug/kg		1	EPA 8270B
106445	4-Methylphenol	BDL	390	ug/kg		1	EPA 8270B
88755	2-Nitrophenol	BDL	390	ug/kg		1	EPA 8270B
100027	4-Nitrophenol	BDL	2000	ug/kg		1	EPA 8270B
87865	Pentachlorophenol	BDL	390	ug/kg		1	EPA 8270B
108952	Phenol	BDL	390	ug/kg		1	EPA 8270B

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

0236



**Sample Description**

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-24-SM0002, 06/19/97, 11:20, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	390	ug/kg		1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	390	ug/kg		1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2000	ug/kg		1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>							
83329	Acenaphthene	BDL	390	ug/kg		1	EPA 8270B
208968	Acenaphthylene	BDL	390	ug/kg		1	EPA 8270B
120127	Anthracene	BDL	390	ug/kg		1	EPA 8270B
56553	Benzo(a)anthracene	BDL	390	ug/kg		1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	390	ug/kg		1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	390	ug/kg		1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	390	ug/kg		1	EPA 8270B
50328	Benzo(a)pyrene	BDL	390	ug/kg		1	EPA 8270B
100516	Benzyl Alcohol	BDL	390	ug/kg		1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	390	ug/kg		1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	390	ug/kg		1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	390	ug/kg		1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	390	ug/kg		1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	390	ug/kg		1	EPA 8270B
106478	p-Chloroaniline	BDL	390	ug/kg		1	EPA 8270B
37	2-Chloronaphthalene	BDL	390	ug/kg		1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	390	ug/kg		1	EPA 8270B
218019	Chrysene	BDL	390	ug/kg		1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	390	ug/kg		1	EPA 8270B
132649	Dibenzofuran	BDL	390	ug/kg		1	EPA 8270B
84742	Di-n-butylphthalate	BDL	390	ug/kg		1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	390	ug/kg		1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	390	ug/kg		1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	390	ug/kg		1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2000	ug/kg		1	EPA 8270B
84662	Diethylphthalate	BDL	390	ug/kg		1	EPA 8270B
131113	Dimethylphthalate	BDL	390	ug/kg		1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	390	ug/kg		1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	390	ug/kg		1	EPA 8270B
117840	Di-n-octylphthalate	BDL	390	ug/kg		1	EPA 8270B
206440	Fluoranthene	BDL	390	ug/kg		1	EPA 8270B
86737	Fluorene	BDL	390	ug/kg		1	EPA 8270B
118741	Hexachlorobenzene	BDL	390	ug/kg		1	EPA 8270B
87683	Hexachlorobutadiene	BDL	390	ug/kg		1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	390	ug/kg		1	EPA 8270B
67721	Hexachloroethane	BDL	390	ug/kg		1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	390	ug/kg		1	EPA 8270B
78591	Isophorone	BDL	390	ug/kg		1	EPA 8270B
76	2-Methylnaphthalene	BDL	390	ug/kg		1	EPA 8270B
91203	Naphthalene	BDL	390	ug/kg		1	EPA 8270B
88744	2-Nitroaniline	BDL	390	ug/kg		1	EPA 8270B
99092	3-Nitroaniline	BDL	390	ug/kg		1	EPA 8270B

BDL - Below Detection Limits

All results other than TOL B are reported on a dry weight basis

Page 3 of 5

## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-24-SM0002, 06/19/97, 11:20, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	390	ug/kg		1	EPA 8270B
98953	Nitrobenzene	BDL	390	ug/kg		1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	390	ug/kg		1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	390	ug/kg		1	EPA 8270B
85018	Phenanthrene	BDL	390	ug/kg		1	EPA 8270B
129000	Pyrene	BDL	390	ug/kg		1	EPA 8270B
110861	Pyridine	BDL	390	ug/kg		1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	390	ug/kg		1	EPA 8270B
<b>Toxicity Characteristic Leaching Procedure (EPA 1311)</b>							
7440382	D004 Arsenic	BDL	2.5	mg/l	5.0	1	EPA 1311
7440393	D005 Barium	0.8	0.3	mg/l	100.0	1	EPA 1311
7440439	D006 Cadmium	0.01	0.01	mg/l	1.0	1	EPA 1311
5103719	D020 alpha-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
5564347	D020 gamma-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
7440473	D007 Chromium	BDL	0.01	mg/l	5.0	1	EPA 1311
	D026 Total Cresol	BDL	0.05	mg/l	200.0	1	EPA 1311
94757	D016 2,4-D	BDL	0.05	mg/l	10.0	1	EPA 1311
106467	D027 1,4-Dichlorobenzene	BDL	0.05	mg/l	7.5	1	EPA 1311
121142	D030 2,4-Dinitrotoluene	BDL	0.05	mg/l	0.13	1	EPA 1311
72208	D012 Endrin	BDL	0.001	mg/l	0.02	1	EPA 1311
76448	D031 Heptachlor	BDL	0.001	mg/l	0.008	1	EPA 1311
1024573	D031 Heptachlor epoxide	BDL	0.001	mg/l	0.008	1	EPA 1311
118741	D032 Hexachlorobenzene	BDL	0.05	mg/l	0.13	1	EPA 1311
87683	D033 Hexachlorobutadiene	BDL	0.05	mg/l	0.5	1	EPA 1311
67721	D034 Hexachloroethane	BDL	0.05	mg/l	3.0	1	EPA 1311
7439921	D008 Lead	BDL	0.1	mg/l	5.0	1	EPA 1311
58899	D013 Lindane	BDL	0.01	mg/l	0.4	1	EPA 1311
7439976	D009 Mercury	BDL	0.005	mg/l	0.2	1	EPA 1311
72435	D014 Methoxychlor	BDL	0.5	mg/l	10.0	1	EPA 1311
98953	D036 Nitrobenzene	BDL	0.05	mg/l	2.0	1	EPA 1311
87865	D037 Pentachlorophenol	BDL	0.05	mg/l	100.0	1	EPA 1311
7782492	D010 Selenium	BDL	0.5	mg/l	1.0	1	EPA 1311
7440224	D011 Silver	BDL	0.01	mg/l	5.0	1	EPA 1311
8001352	D015 Toxaphene	BDL	0.05	mg/l	0.5	1	EPA 1311
95954	D041 2,4,5-Trichlorophenol	BDL	0.05	mg/l	400.0	1	EPA 1311
88062	D042 2,4,6-Trichlorophenol	BDL	0.05	mg/l	2.0	1	EPA 1311
93721	D017 2,4,5-TP Silvex	BDL	0.1	mg/l	1.0	1	EPA 1311
110861	D038 Pyridine	BDL	0.05	mg/l	5.0	1	EPA 1311
<b>Zero Headspace Extraction (ZHE)</b>							
71432	D018 Benzene	BDL	0.02	mg/l	0.5	1	EPA 1311
56235	D019 Carbon tetrachloride	BDL	0.02	mg/l	0.5	1	EPA 1311
108907	D021 Chlorobenzene	BDL	0.02	mg/l	100.0	1	EPA 1311
67663	D022 Chloroform	BDL	0.02	mg/l	6.0	1	EPA 1311
107062	D028 1,2-Dichloroethane	BDL	0.02	mg/l	0.5	1	EPA 1311
75354	D029 1,1-Dichloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
78933	D035 Methyl ethyl ketone	BDL	0.5	mg/l	200.0	1	EPA 1311

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

**Sample Description**

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-24-SM0002, 06/19/97, 11:20, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
127184	D039 Tetrachloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
79016	D040 Trichloroethene	BDL	0.02	mg/l	0.5	1	EPA 1311
75014	D043 Vinyl chloride	BDL	0.02	mg/l	0.2	1	EPA 1311

Respectfully submitted,



Project Manager



Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P. Griffin

Report No.: 84273-8

July 24, 1997

### Sample Description

Sloss Industries

Sludge, G & M Project #TF0320.015, 970619-LD-24-SM0003, 06/19/97, 11:45, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
	Moisture	14.6	0.04	%		1	
57125	Total Cyanide	2.4	0.2	mg/kg		1	EPA 9010A
Priority Pollutant Metals							
Metals							
7440360	Total Antimony	18	5.9	mg/kg		1	EPA 6010A
7440382	Total Arsenic	15	1.2	mg/kg		1	EPA 7060A
7440393	Total Barium	240	1.2	mg/kg		1	EPA 6010A
7440417	Total Beryllium	3.1	0.6	mg/kg		1	EPA 6010A
7440439	Total Cadmium	8.2	0.6	mg/kg		1	EPA 6010A
7440473	Total Chromium	160	1.2	mg/kg		1	EPA 6010A
7440508	Total Copper	87	2.4	mg/kg		1	EPA 6010A
7439921	Total Lead	1703	2.9	mg/kg		1	EPA 6010A
7439976	Total Mercury	BDL	0.29	mg/kg		1	EPA 7471
7440020	Total Nickel	42	2.4	mg/kg		1	EPA 6010A
7782492	Total Selenium	BDL	4.7	mg/kg		1	EPA 7740
7440224	Total Silver	2.8	1.2	mg/kg		1	EPA 6010A
7440280	Total Thallium	BDL	4.7	mg/kg		1	EPA 7841
7440666	Total Zinc	2300	2.4	mg/kg		1	EPA 6010A
Volatile Organics (EPA 8260A)							
67641	Acetone	BDL	59	ug/kg		1	EPA 8260A
107028	Acrolein	BDL	59	ug/kg		1	EPA 8260A
107131	Acrylonitrile	BDL	59	ug/kg		1	EPA 8260A
71432	Benzene	BDL	6	ug/kg		1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg		1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg		1	EPA 8260A
74839	Bromomethane	BDL	12	ug/kg		1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg		1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg		1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg		1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg		1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg		1	EPA 8260A
74873	Chloromethane	BDL	12	ug/kg		1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	12	ug/kg		1	EPA 8260A

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

0240

Page 1 of 5

**Sample Description**

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-24-SM0003, 06/19/97, 11:45, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg		1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg		1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg		1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	12	ug/kg		1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg		1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg		1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg		1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg		1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg		1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg		1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg		1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg		1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg		1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg		1	EPA 8260A
591786	2-Hexanone	BDL	59	ug/kg		1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg		1	EPA 8260A
78933	2-Butanone	BDL	59	ug/kg		1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg		1	EPA 8260A
7101	4-Methyl-2-pentanone	BDL	59	ug/kg		1	EPA 8260A
7425	Styrene	BDL	6	ug/kg		1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg		1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg		1	EPA 8260A
108883	Toluene	BDL	6	ug/kg		1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg		1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg		1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg		1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg		1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg		1	EPA 8260A
108054	Vinyl acetate	BDL	12	ug/kg		1	EPA 8260A
75014	Vinyl chloride	BDL	12	ug/kg		1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg		1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>							
59507	4-Chloro-3-methylphenol	BDL	390	ug/kg		1	EPA 8270B
95578	2-Chlorophenol	BDL	390	ug/kg		1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	390	ug/kg		1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	390	ug/kg		1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	390	ug/kg		1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2000	ug/kg		1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2000	ug/kg		1	EPA 8270B
95487	2-Methylphenol	BDL	390	ug/kg		1	EPA 8270B
108394	3-Methylphenol	BDL	390	ug/kg		1	EPA 8270B
5445	4-Methylphenol	BDL	390	ug/kg		1	EPA 8270B
755	2-Nitrophenol	BDL	390	ug/kg		1	EPA 8270B
100027	4-Nitrophenol	BDL	2000	ug/kg		1	EPA 8270B
87865	Pentachlorophenol	BDL	390	ug/kg		1	EPA 8270B
108952	Phenol	BDL	390	ug/kg		1	EPA 8270B

BDL - Below Detection Limits

## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-24-SM0003, 06/19/97, 11:45, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	390	ug/kg		1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	390	ug/kg		1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2000	ug/kg		1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>							
83329	Acenaphthene	BDL	390	ug/kg		1	EPA 8270B
208968	Acenaphthylene	BDL	390	ug/kg		1	EPA 8270B
120127	Anthracene	BDL	390	ug/kg		1	EPA 8270B
56553	Benzo(a)anthracene	BDL	390	ug/kg		1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	390	ug/kg		1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	390	ug/kg		1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	390	ug/kg		1	EPA 8270B
50328	Benzo(a)pyrene	BDL	390	ug/kg		1	EPA 8270B
100516	Benzyl Alcohol	BDL	390	ug/kg		1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	390	ug/kg		1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	390	ug/kg		1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	390	ug/kg		1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	390	ug/kg		1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	390	ug/kg		1	EPA 8270B
106478	p-Chloroaniline	BDL	390	ug/kg		1	EPA 8270B
91587	2-Chloronaphthalene	BDL	390	ug/kg		1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	390	ug/kg		1	EPA 8270B
218019	Chrysene	BDL	390	ug/kg		1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	390	ug/kg		1	EPA 8270B
132649	Dibenzofuran	BDL	390	ug/kg		1	EPA 8270B
84742	Di-n-butylphthalate	BDL	390	ug/kg		1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	390	ug/kg		1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	390	ug/kg		1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	390	ug/kg		1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2000	ug/kg		1	EPA 8270B
84662	Diethylphthalate	BDL	390	ug/kg		1	EPA 8270B
131113	Dimethylphthalate	BDL	390	ug/kg		1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	390	ug/kg		1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	390	ug/kg		1	EPA 8270B
117840	Di-n-octylphthalate	BDL	390	ug/kg		1	EPA 8270B
206440	Fluoranthene	BDL	390	ug/kg		1	EPA 8270B
86737	Fluorene	BDL	390	ug/kg		1	EPA 8270B
118741	Hexachlorobenzene	BDL	390	ug/kg		1	EPA 8270B
87683	Hexachlorobutadiene	BDL	390	ug/kg		1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	390	ug/kg		1	EPA 8270B
67721	Hexachloroethane	BDL	390	ug/kg		1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	390	ug/kg		1	EPA 8270B
78591	Isophorone	BDL	390	ug/kg		1	EPA 8270B
91576	2-Methylnaphthalene	BDL	390	ug/kg		1	EPA 8270B
91203	Naphthalene	BDL	390	ug/kg		1	EPA 8270B
88744	2-Nitroaniline	BDL	390	ug/kg		1	EPA 8270B
99092	3-Nitroaniline	BDL	390	ug/kg		1	EPA 8270B

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-24-SM0003, 06/19/97, 11:45, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	390	ug/kg		1	EPA 8270B
98953	Nitrobenzene	BDL	390	ug/kg		1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	390	ug/kg		1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	390	ug/kg		1	EPA 8270B
85018	Phenanthrene	BDL	390	ug/kg		1	EPA 8270B
129000	Pyrene	BDL	390	ug/kg		1	EPA 8270B
110861	Pyridine	BDL	390	ug/kg		1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	390	ug/kg		1	EPA 8270B
Toxicity Characteristic Leaching Procedure (EPA 1311)							
7440382	D004 Arsenic	BDL	2.5	mg/l	5.0	1	EPA 1311
7440393	D005 Barium	0.6	0.3	mg/l	100.0	1	EPA 1311
7440439	D006 Cadmium	BDL	0.01	mg/l	1.0	1	EPA 1311
5103719	D020 alpha-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
5564347	D020 gamma-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
7440473	D007 Chromium	BDL	0.01	mg/l	5.0	1	EPA 1311
	D026 Total Cresol	BDL	0.05	mg/l	200.0	1	EPA 1311
94757	D016 2,4-D	BDL	0.05	mg/l	10.0	1	EPA 1311
106467	D027 1,4-Dichlorobenzene	BDL	0.05	mg/l	7.5	1	EPA 1311
11142	D030 2,4-Dinitrotoluene	BDL	0.05	mg/l	0.13	1	EPA 1311
108	D012 Endrin	BDL	0.001	mg/l	0.02	1	EPA 1311
76448	D031 Heptachlor	BDL	0.001	mg/l	0.008	1	EPA 1311
1024573	D031 Heptachlor epoxide	BDL	0.001	mg/l	0.008	1	EPA 1311
118741	D032 Hexachlorobenzene	BDL	0.05	mg/l	0.13	1	EPA 1311
87683	D033 Hexachlorobutadiene	BDL	0.05	mg/l	0.5	1	EPA 1311
67721	D034 Hexachloroethane	BDL	0.05	mg/l	3.0	1	EPA 1311
7439921	D008 Lead	BDL	0.1	mg/l	5.0	1	EPA 1311
58899	D013 Lindane	BDL	0.01	mg/l	0.4	1	EPA 1311
7439976	D009 Mercury	BDL	0.005	mg/l	0.2	1	EPA 1311
72435	D014 Methoxychlor	BDL	0.5	mg/l	10.0	1	EPA 1311
98953	D036 Nitrobenzene	BDL	0.05	mg/l	2.0	1	EPA 1311
87865	D037 Pentachlorophenol	BDL	0.05	mg/l	100.0	1	EPA 1311
7782492	D010 Selenium	BDL	0.5	mg/l	1.0	1	EPA 1311
7440224	D011 Silver	BDL	0.01	mg/l	5.0	1	EPA 1311
8001352	D015 Toxaphene	BDL	0.05	mg/l	0.5	1	EPA 1311
95954	D041 2,4,5-Trichlorophenol	BDL	0.05	mg/l	400.0	1	EPA 1311
88062	D042 2,4,6-Trichlorophenol	BDL	0.05	mg/l	2.0	1	EPA 1311
93721	D017 2,4,5-TP Silvex	BDL	0.1	mg/l	1.0	1	EPA 1311
110861	D038 Pyridine	BDL	0.05	mg/l	5.0	1	EPA 1311
Zero Headspace Extraction (ZHE)							
71432	D018 Benzene	BDL	0.02	mg/l	0.5	1	EPA 1311
56235	D019 Carbon tetrachloride	BDL	0.02	mg/l	0.5	1	EPA 1311
128907	D021 Chlorobenzene	BDL	0.02	mg/l	100.0	1	EPA 1311
1063	D022 Chloroform	BDL	0.02	mg/l	6.0	1	EPA 1311
107062	D028 1,2-Dichloroethane	BDL	0.02	mg/l	0.5	1	EPA 1311
75354	D029 1,1-Dichloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
78933	D035 Methyl ethyl ketone	BDL	0.5	mg/l	200.0	1	EPA 1311

BDL - Below Detection Limits

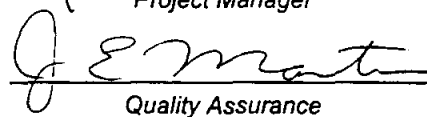
## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-24-SM0003, 06/19/97, 11:45, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
127184	D039 Tetrachloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
79016	D040 Trichloroethene	BDL	0.02	mg/l	0.5	1	EPA 1311
75014	D043 Vinyl chloride	BDL	0.02	mg/l	0.2	1	EPA 1311

Respectfully submitted,

  
Project Manager  
Quality Assurance





# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P. Griffin

Report No.: 84273-9

July 24, 1997

### Sample Description

Sloss Industries

Sludge, G & M Project #TF0320.015, 970619-LD-24-SM0004, 06/19/97, 12:15, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
57125	Moisture	18.6	0.02	%		1	
	Total Cyanide	4.7	0.3	mg/kg		1	EPA 9010A
Priority Pollutant Metals							
Metals							
7440360	Total Antimony	15	6.1	mg/kg		1	EPA 6010A
7440382	Total Arsenic	15	1.2	mg/kg		1	EPA 7060A
7439921	Total Barium	220	1.2	mg/kg		1	EPA 6010A
7440417	Total Beryllium	2.6	0.6	mg/kg		1	EPA 6010A
7440439	Total Cadmium	11	0.6	mg/kg		1	EPA 6010A
7440473	Total Chromium	50	1.2	mg/kg		1	EPA 6010A
7440508	Total Copper	130	2.4	mg/kg		1	EPA 6010A
7439921	Total Lead	530	3.1	mg/kg		1	EPA 6010A
7439976	Total Mercury	BDL	0.31	mg/kg		1	EPA 7471
7440020	Total Nickel	33	2.4	mg/kg		1	EPA 6010A
7782492	Total Selenium	BDL	4.9	mg/kg		1	EPA 7740
7440224	Total Silver	6.1	1.2	mg/kg		1	EPA 6010A
7440280	Total Thallium	BDL	4.9	mg/kg		1	EPA 7841
7440666	Total Zinc	4500	2.4	mg/kg		1	EPA 6010A
Volatile Organics (EPA 8260A)							
67641	Acetone	BDL	62	ug/kg		1	EPA 8260A
107028	Acrolein	BDL	62	ug/kg		1	EPA 8260A
107131	Acrylonitrile	BDL	62	ug/kg		1	EPA 8260A
71432	Benzene	BDL	6	ug/kg		1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg		1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg		1	EPA 8260A
74839	Bromomethane	BDL	12	ug/kg		1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg		1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg		1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg		1	EPA 8260A
1003	Chloroethane	BDL	6	ug/kg		1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg		1	EPA 8260A
74873	Chloromethane	BDL	12	ug/kg		1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	12	ug/kg		1	EPA 8260A

BDL - Below Detection Limits

0245

## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-24-SM0004, 06/19/97, 12:15, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg		1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg		1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg		1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	12	ug/kg		1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg		1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg		1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg		1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg		1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg		1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg		1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg		1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg		1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg		1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg		1	EPA 8260A
591786	2-Hexanone	BDL	62	ug/kg		1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg		1	EPA 8260A
78933	2-Butanone	BDL	62	ug/kg		1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg		1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	62	ug/kg		1	EPA 8260A
100425	Styrene	BDL	6	ug/kg		1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg		1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg		1	EPA 8260A
108883	Toluene	BDL	6	ug/kg		1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg		1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg		1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg		1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg		1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg		1	EPA 8260A
108054	Vinyl acetate	BDL	12	ug/kg		1	EPA 8260A
75014	Vinyl chloride	BDL	12	ug/kg		1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg		1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>							
59507	4-Chloro-3-methylphenol	BDL	410	ug/kg		1	EPA 8270B
95578	2-Chlorophenol	BDL	410	ug/kg		1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	410	ug/kg		1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	410	ug/kg		1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	410	ug/kg		1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2100	ug/kg		1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2100	ug/kg		1	EPA 8270B
95487	2-Methylphenol	BDL	410	ug/kg		1	EPA 8270B
108394	3-Methylphenol	BDL	410	ug/kg		1	EPA 8270B
106445	4-Methylphenol	BDL	410	ug/kg		1	EPA 8270B
88755	2-Nitrophenol	BDL	410	ug/kg		1	EPA 8270B
100027	4-Nitrophenol	BDL	2100	ug/kg		1	EPA 8270B
87865	Pentachlorophenol	BDL	410	ug/kg		1	EPA 8270B
108952	Phenol	BDL	410	ug/kg		1	EPA 8270B

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-24-SM0004, 06/19/97, 12:15, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	410	ug/kg		1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	410	ug/kg		1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2100	ug/kg		1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>							
83329	Acenaphthene	BDL	410	ug/kg		1	EPA 8270B
208968	Acenaphthylene	BDL	410	ug/kg		1	EPA 8270B
120127	Anthracene	BDL	410	ug/kg		1	EPA 8270B
56553	Benzo(a)anthracene	BDL	410	ug/kg		1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	410	ug/kg		1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	410	ug/kg		1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	410	ug/kg		1	EPA 8270B
50328	Benzo(a)pyrene	BDL	410	ug/kg		1	EPA 8270B
100516	Benzyl Alcohol	BDL	410	ug/kg		1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	410	ug/kg		1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	410	ug/kg		1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	410	ug/kg		1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	410	ug/kg		1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	410	ug/kg		1	EPA 8270B
106478	p-Chloroaniline	BDL	410	ug/kg		1	EPA 8270B
37	2-Chloronaphthalene	BDL	410	ug/kg		1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	410	ug/kg		1	EPA 8270B
218019	Chrysene	BDL	410	ug/kg		1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	410	ug/kg		1	EPA 8270B
132649	Dibenzofuran	BDL	410	ug/kg		1	EPA 8270B
84742	Di-n-butylphthalate	BDL	410	ug/kg		1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	410	ug/kg		1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	410	ug/kg		1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	410	ug/kg		1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2100	ug/kg		1	EPA 8270B
84662	Diethylphthalate	BDL	410	ug/kg		1	EPA 8270B
131113	Dimethylphthalate	BDL	410	ug/kg		1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	410	ug/kg		1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	410	ug/kg		1	EPA 8270B
117840	Di-n-octylphthalate	BDL	410	ug/kg		1	EPA 8270B
206440	Fluoranthene	BDL	410	ug/kg		1	EPA 8270B
86737	Fluorene	BDL	410	ug/kg		1	EPA 8270B
118741	Hexachlorobenzene	BDL	410	ug/kg		1	EPA 8270B
87683	Hexachlorobutadiene	BDL	410	ug/kg		1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	410	ug/kg		1	EPA 8270B
67721	Hexachloroethane	BDL	410	ug/kg		1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	410	ug/kg		1	EPA 8270B
79591	Isophorone	BDL	410	ug/kg		1	EPA 8270B
76	2-Methylnaphthalene	BDL	410	ug/kg		1	EPA 8270B
91203	Naphthalene	BDL	410	ug/kg		1	EPA 8270B
88744	2-Nitroaniline	BDL	410	ug/kg		1	EPA 8270B
99092	3-Nitroaniline	BDL	410	ug/kg		1	EPA 8270B

BDL - Below Detection Limits

0247

## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-24-SM0004, 06/19/97, 12:15, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	410	ug/kg		1	EPA 8270B
98953	Nitrobenzene	BDL	410	ug/kg		1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	410	ug/kg		1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	410	ug/kg		1	EPA 8270B
85018	Phenanthrene	BDL	410	ug/kg		1	EPA 8270B
129000	Pyrene	BDL	410	ug/kg		1	EPA 8270B
110861	Pyridine	BDL	410	ug/kg		1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	410	ug/kg		1	EPA 8270B
<b>Toxicity Characteristic Leaching Procedure (EPA 1311)</b>							
7440382	D004 Arsenic	BDL	2.5	mg/l	5.0	1	EPA 1311
7440393	D005 Barium	1.2	0.3	mg/l	100.0	1	EPA 1311
7440439	D006 Cadmium	0.06	0.01	mg/l	1.0	1	EPA 1311
5103719	D020 alpha-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
5564347	D020 gamma-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
7440473	D007 Chromium	BDL	0.01	mg/l	5.0	1	EPA 1311
	D026 Total Cresol	BDL	0.05	mg/l	200.0	1	EPA 1311
94757	D016 2,4-D	BDL	0.05	mg/l	10.0	1	EPA 1311
106467	D027 1,4-Dichlorobenzene	BDL	0.05	mg/l	7.5	1	EPA 1311
121142	D030 2,4-Dinitrotoluene	BDL	0.05	mg/l	0.13	1	EPA 1311
72208	D012 Endrin	BDL	0.001	mg/l	0.02	1	EPA 1311
76448	D031 Heptachlor	BDL	0.001	mg/l	0.008	1	EPA 1311
1024573	D031 Heptachlor epoxide	BDL	0.001	mg/l	0.008	1	EPA 1311
118741	D032 Hexachlorobenzene	BDL	0.05	mg/l	0.13	1	EPA 1311
87683	D033 Hexachlorobutadiene	BDL	0.05	mg/l	0.5	1	EPA 1311
67721	D034 Hexachloroethane	BDL	0.05	mg/l	3.0	1	EPA 1311
7439921	D008 Lead	BDL	0.1	mg/l	5.0	1	EPA 1311
58899	D013 Lindane	BDL	0.01	mg/l	0.4	1	EPA 1311
7439976	D009 Mercury	BDL	0.005	mg/l	0.2	1	EPA 1311
72435	D014 Methoxychlor	BDL	0.5	mg/l	10.0	1	EPA 1311
98953	D036 Nitrobenzene	BDL	0.05	mg/l	2.0	1	EPA 1311
87865	D037 Pentachlorophenol	BDL	0.05	mg/l	100.0	1	EPA 1311
7782492	D010 Selenium	BDL	0.5	mg/l	1.0	1	EPA 1311
7440224	D011 Silver	BDL	0.01	mg/l	5.0	1	EPA 1311
8001352	D015 Toxaphene	BDL	0.05	mg/l	0.5	1	EPA 1311
95954	D041 2,4,5-Trichlorophenol	BDL	0.05	mg/l	400.0	1	EPA 1311
88062	D042 2,4,6-Trichlorophenol	BDL	0.05	mg/l	2.0	1	EPA 1311
93721	D017 2,4,5-TP Silvex	BDL	0.1	mg/l	1.0	1	EPA 1311
110861	D038 Pyridine	BDL	0.05	mg/l	5.0	1	EPA 1311
<b>Zero Headspace Extraction (ZHE)</b>							
71432	D018 Benzene	BDL	0.02	mg/l	0.5	1	EPA 1311
56235	D019 Carbon tetrachloride	BDL	0.02	mg/l	0.5	1	EPA 1311
108907	D021 Chlorobenzene	BDL	0.02	mg/l	100.0	1	EPA 1311
67663	D022 Chloroform	BDL	0.02	mg/l	6.0	1	EPA 1311
107062	D028 1,2-Dichloroethane	BDL	0.02	mg/l	0.5	1	EPA 1311
75354	D029 1,1-Dichloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
78933	D035 Methyl ethyl ketone	BDL	0.5	mg/l	200.0	1	EPA 1311

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

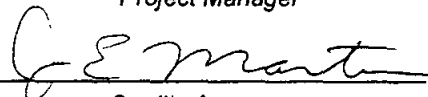
**Sample Description**

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-24-SM0004, 06/19/97, 12:15, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
127184	D039 Tetrachloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
79016	D040 Trichloroethene	BDL	0.02	mg/l	0.5	1	EPA 1311
75014	D043 Vinyl chloride	BDL	0.02	mg/l	0.2	1	EPA 1311

Respectfully submitted,

  
\_\_\_\_\_  
Project Manager  
\_\_\_\_\_  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P. Griffin

Report No.: 84273-10

July 24, 1997

### Sample Description

Sloss Industries

Sludge, G & M Project #TF0320.015, 970619-LD-24-SM9001, 06/19/97,, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
57125	Moisture	16.4	0.03	%		1	
	Total Cyanide	3.1	0.2	mg/kg		1	EPA 9010A
Priority Pollutant Metals							
Metals							
7440360	Total Antimony	17	6.0	mg/kg		1	EPA 6010A
7440382	Total Arsenic	17	1.2	mg/kg		1	EPA 7060A
7440393	Total Barium	190	1.2	mg/kg		1	EPA 601
7440417	Total Beryllium	2.6	0.6	mg/kg		1	EPA 6010A
7440439	Total Cadmium	9.0	0.6	mg/kg		1	EPA 6010A
7440473	Total Chromium	110	1.2	mg/kg		1	EPA 6010A
7440508	Total Copper	110	2.4	mg/kg		1	EPA 6010A
7439921	Total Lead	330	3.0	mg/kg		1	EPA 6010A
7439976	Total Mercury	BDL	0.299	mg/kg		1	EPA 7471
7440020	Total Nickel	36	2.4	mg/kg		1	EPA 6010A
7782492	Total Selenium	BDL	4.8	mg/kg		1	EPA 7740
7440224	Total Silver	4.8	1.2	mg/kg		1	EPA 6010A
7440280	Total Thallium	BDL	4.8	mg/kg		1	EPA 7841
7440666	Total Zinc	3000	2.4	mg/kg		1	EPA 6010A
Volatile Organics (EPA 8260A)							
67641	Acetone	BDL	60	ug/kg		1	EPA 8260A
107028	Acrolein	BDL	60	ug/kg		1	EPA 8260A
107131	Acrylonitrile	BDL	60	ug/kg		1	EPA 8260A
71432	Benzene	BDL	6	ug/kg		1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg		1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg		1	EPA 8260A
74839	Bromomethane	BDL	12	ug/kg		1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg		1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg		1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg		1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg		1	EPA 826
67663	Chloroform	BDL	6	ug/kg		1	EPA 8260A
74873	Chloromethane	BDL	12	ug/kg		1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	12	ug/kg		1	EPA 8260A

BDL - Below Detection Limits

All concentrations are reported on a dry weight basis

0250

Page 1 of 5

## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-24-SM9001, 06/19/97,, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg		1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg		1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg		1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	12	ug/kg		1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg		1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg		1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg		1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg		1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg		1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg		1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg		1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg		1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg		1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg		1	EPA 8260A
591786	2-Hexanone	BDL	60	ug/kg		1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg		1	EPA 8260A
78933	2-Butanone	BDL	60	ug/kg		1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg		1	EPA 8260A
1008101	4-Methyl-2-pentanone	BDL	60	ug/kg		1	EPA 8260A
425	Styrene	BDL	6	ug/kg		1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg		1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg		1	EPA 8260A
108883	Toluene	BDL	6	ug/kg		1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg		1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg		1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg		1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg		1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg		1	EPA 8260A
108054	Vinyl acetate	BDL	12	ug/kg		1	EPA 8260A
75014	Vinyl chloride	BDL	12	ug/kg		1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg		1	EPA 8260A
Acid Extractable Organics (EPA 8270B)							
59507	4-Chloro-3-methylphenol	BDL	390	ug/kg		1	EPA 8270B
95578	2-Chlorophenol	BDL	390	ug/kg		1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	390	ug/kg		1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	390	ug/kg		1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	390	ug/kg		1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2000	ug/kg		1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2000	ug/kg		1	EPA 8270B
95487	2-Methylphenol	BDL	390	ug/kg		1	EPA 8270B
108394	3-Methylphenol	BDL	390	ug/kg		1	EPA 8270B
106445	4-Methylphenol	BDL	390	ug/kg		1	EPA 8270B
55	2-Nitrophenol	BDL	390	ug/kg		1	EPA 8270B
100027	4-Nitrophenol	BDL	2000	ug/kg		1	EPA 8270B
87865	Pentachlorophenol	BDL	390	ug/kg		1	EPA 8270B
108952	Phenol	BDL	390	ug/kg		1	EPA 8270B

## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-24-SM9001, 06/19/97,, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	390	ug/kg		1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	390	ug/kg		1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2000	ug/kg		1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>							
83329	Acenaphthene	BDL	390	ug/kg		1	EPA 8270B
208968	Acenaphthylene	BDL	390	ug/kg		1	EPA 8270B
120127	Anthracene	BDL	390	ug/kg		1	EPA 8270B
56553	Benzo(a)anthracene	BDL	390	ug/kg		1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	390	ug/kg		1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	390	ug/kg		1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	390	ug/kg		1	EPA 8270B
50328	Benzo(a)pyrene	BDL	390	ug/kg		1	EPA 8270B
100516	Benzyl Alcohol	BDL	390	ug/kg		1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	390	ug/kg		1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	390	ug/kg		1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	390	ug/kg		1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	390	ug/kg		1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	390	ug/kg		1	EPA 8270B
106478	p-Chloroaniline	BDL	390	ug/kg		1	EPA 8270B
91587	2-Chloronaphthalene	BDL	390	ug/kg		1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	390	ug/kg		1	EPA 8270B
218019	Chrysene	BDL	390	ug/kg		1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	390	ug/kg		1	EPA 8270B
132649	Dibenzofuran	BDL	390	ug/kg		1	EPA 8270B
84742	Di-n-butylphthalate	BDL	390	ug/kg		1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	390	ug/kg		1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	390	ug/kg		1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	390	ug/kg		1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2000	ug/kg		1	EPA 8270B
84662	Diethylphthalate	BDL	390	ug/kg		1	EPA 8270B
131113	Dimethylphthalate	BDL	390	ug/kg		1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	390	ug/kg		1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	390	ug/kg		1	EPA 8270B
117840	Di-n-octylphthalate	BDL	390	ug/kg		1	EPA 8270B
206440	Fluoranthene	BDL	390	ug/kg		1	EPA 8270B
86737	Fluorene	BDL	390	ug/kg		1	EPA 8270B
118741	Hexachlorobenzene	BDL	390	ug/kg		1	EPA 8270B
87683	Hexachlorobutadiene	BDL	390	ug/kg		1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	390	ug/kg		1	EPA 8270B
67721	Hexachloroethane	BDL	390	ug/kg		1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	390	ug/kg		1	EPA 8270B
78591	Isophorone	BDL	390	ug/kg		1	EPA 8270B
91576	2-Methylnaphthalene	BDL	390	ug/kg		1	EPA 8270B
91203	Naphthalene	BDL	390	ug/kg		1	EPA 8270B
88744	2-Nitroaniline	BDL	390	ug/kg		1	EPA 8270B
99092	3-Nitroaniline	BDL	390	ug/kg		1	EPA 8270B

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis



**Sample Description**

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-24-SM9001, 06/19/97,, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	390	ug/kg		1	EPA 8270B
98953	Nitrobenzene	BDL	390	ug/kg		1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	390	ug/kg		1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	390	ug/kg		1	EPA 8270B
85018	Phenanthrene	BDL	390	ug/kg		1	EPA 8270B
129000	Pyrene	BDL	390	ug/kg		1	EPA 8270B
110861	Pyridine	BDL	390	ug/kg		1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	390	ug/kg		1	EPA 8270B
<b>Toxicity Characteristic Leaching Procedure (EPA 1311)</b>							
7440382	D004 Arsenic	BDL	2.5	mg/l	5.0	1	EPA 1311
7440393	D005 Barium	0.9	0.3	mg/l	100.0	1	EPA 1311
7440439	D006 Cadmium	0.03	0.01	mg/l	1.0	1	EPA 1311
5103719	D020 alpha-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
5564347	D020 gamma-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
7440473	D007 Chromium	BDL	0.01	mg/l	5.0	1	EPA 1311
	D026 Total Cresol	BDL	0.05	mg/l	200.0	1	EPA 1311
94757	D016 2,4-D	BDL	0.05	mg/l	10.0	1	EPA 1311
106467	D027 1,4-Dichlorobenzene	BDL	0.05	mg/l	7.5	1	EPA 1311
121142	D030 2,4-Dinitrotoluene	BDL	0.05	mg/l	0.13	1	EPA 1311
08	D012 Endrin	BDL	0.001	mg/l	0.02	1	EPA 1311
76448	D031 Heptachlor	BDL	0.001	mg/l	0.008	1	EPA 1311
1024573	D031 Heptachlor epoxide	BDL	0.001	mg/l	0.008	1	EPA 1311
118741	D032 Hexachlorobenzene	BDL	0.05	mg/l	0.13	1	EPA 1311
87683	D033 Hexachlorobutadiene	BDL	0.05	mg/l	0.5	1	EPA 1311
67721	D034 Hexachloroethane	BDL	0.05	mg/l	3.0	1	EPA 1311
7439921	D008 Lead	BDL	0.1	mg/l	5.0	1	EPA 1311
58899	D013 Lindane	BDL	0.01	mg/l	0.4	1	EPA 1311
7439976	D009 Mercury	BDL	0.006	mg/l	0.2	1	EPA 1311
72435	D014 Methoxychlor	BDL	0.5	mg/l	10.0	1	EPA 1311
98953	D036 Nitrobenzene	BDL	0.05	mg/l	2.0	1	EPA 1311
87865	D037 Pentachlorophenol	BDL	0.05	mg/l	100.0	1	EPA 1311
7782492	D010 Selenium	BDL	0.5	mg/l	1.0	1	EPA 1311
7440224	D011 Silver	BDL	0.01	mg/l	5.0	1	EPA 1311
8001352	D015 Toxaphene	BDL	0.05	mg/l	0.5	1	EPA 1311
95954	D041 2,4,5-Trichlorophenol	BDL	0.05	mg/l	400.0	1	EPA 1311
88062	D042 2,4,6-Trichlorophenol	BDL	0.05	mg/l	2.0	1	EPA 1311
93721	D017 2,4,5-TP Silvex	BDL	0.1	mg/l	1.0	1	EPA 1311
110861	D038 Pyridine	BDL	0.05	mg/l	5.0	1	EPA 1311
<b>Zero Headspace Extraction (ZHE)</b>							
71432	D018 Benzene	BDL	0.02	mg/l	0.5	1	EPA 1311
56235	D019 Carbon tetrachloride	BDL	0.02	mg/l	0.5	1	EPA 1311
108907	D021 Chlorobenzene	BDL	0.02	mg/l	100.0	1	EPA 1311
63	D022 Chloroform	BDL	0.02	mg/l	6.0	1	EPA 1311
107062	D028 1,2-Dichloroethane	BDL	0.02	mg/l	0.5	1	EPA 1311
75354	D029 1,1-Dichloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
78933	D035 Methyl ethyl ketone	BDL	0.5	mg/l	200.0	1	EPA 1311

BDL - Below Detection Limits

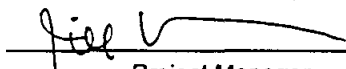
## Sample Description


Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-24-SM9001, 06/19/97,, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
127184	D039 Tetrachloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
79016	D040 Trichloroethene	BDL	0.02	mg/l	0.5	1	EPA 1311
75014	D043 Vinyl chloride	BDL	0.02	mg/l	0.2	1	EPA 1311

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P. Griffin  
Report No.: 84273-11

July 24, 1997

### Sample Description

Sloss Industries

Sludge, G & M Project #TF0320.015, 970619-LD-23-SM0001, 06/19/97, 14:40, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
57125	Moisture	82.1	0.02	%		1	
	Total Cyanide	20.3	1.1	mg/kg		1	EPA 9010A
Priority Pollutant Metals							
Metals							
7440360	Total Antimony	BDL	28	mg/kg		1	EPA 6010A
7440382	Total Arsenic	11	5.6	mg/kg		1	EPA 7060A
0393	Total Barium	160	5.6	mg/kg		1	EPA 6010A
7440417	Total Beryllium	BDL	2.8	mg/kg		1	EPA 6010A
7440439	Total Cadmium	BDL	2.8	mg/kg		1	EPA 6010A
7440473	Total Chromium	65	5.6	mg/kg		1	EPA 6010A
7440508	Total Copper	32	11	mg/kg		1	EPA 6010A
7439921	Total Lead	18	14	mg/kg		1	EPA 6010A
7439976	Total Mercury	BDL	1.396	mg/kg		1	EPA 7471
7440020	Total Nickel	68	11	mg/kg		1	EPA 6010A
7782492	Total Selenium	45	22	mg/kg		1	EPA 7740
7440224	Total Silver	BDL	5.6	mg/kg		1	EPA 6010A
7440280	Total Thallium	BDL	22	mg/kg		1	EPA 7841
7440666	Total Zinc	140	11	mg/kg		1	EPA 6010A
Volatile Organics (EPA 8260A)							
67641	Acetone	1200	280	ug/kg		1	EPA 8260A
107028	Acrolein	BDL	280	ug/kg		1	EPA 8260A
107131	Acrylonitrile	BDL	280	ug/kg		1	EPA 8260A
71432	Benzene	BDL	28	ug/kg		1	EPA 8260A
75274	Bromodichloromethane	BDL	28	ug/kg		1	EPA 8260A
75252	Bromoform	BDL	28	ug/kg		1	EPA 8260A
74839	Bromomethane	BDL	56	ug/kg		1	EPA 8260A
75150	Carbon disulfide	BDL	28	ug/kg		1	EPA 8260A
56235	Carbon tetrachloride	BDL	28	ug/kg		1	EPA 8260A
108907	Chlorobenzene	BDL	28	ug/kg		1	EPA 8260A
103	Chloroethane	BDL	28	ug/kg		1	EPA 8260A
74663	Chloroform	BDL	28	ug/kg		1	EPA 8260A
74873	Chloromethane	BDL	56	ug/kg		1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	56	ug/kg		1	EPA 8260A

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

0255

**Sample Description**

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-23-SM0001, 06/19/97, 14:40, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	28	ug/kg		1	EPA 8260A
106934	1,2-Dibromoethane	BDL	28	ug/kg		1	EPA 8260A
74953	Dibromomethane	BDL	28	ug/kg		1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	56	ug/kg		1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	28	ug/kg		1	EPA 8260A
75343	1,1-Dichloroethane	BDL	28	ug/kg		1	EPA 8260A
107062	1,2-Dichloroethane	BDL	28	ug/kg		1	EPA 8260A
75354	1,1-Dichloroethene	BDL	28	ug/kg		1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	28	ug/kg		1	EPA 8260A
78875	1,2-Dichloropropane	BDL	28	ug/kg		1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	28	ug/kg		1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	28	ug/kg		1	EPA 8260A
100414	Ethylbenzene	BDL	28	ug/kg		1	EPA 8260A
97632	Ethyl methacrylate	BDL	28	ug/kg		1	EPA 8260A
591786	2-Hexanone	BDL	280	ug/kg		1	EPA 8260A
74884	Iodomethane	BDL	28	ug/kg		1	EPA 8260A
78933	2-Butanone	530	280	ug/kg		1	EPA 8260A
75092	Methylene chloride	BDL	28	ug/kg		1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	280	ug/kg		1	EPA 8260A
100425	Styrene	BDL	28	ug/kg		1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	28	ug/kg		1	EPA 8260A
127184	Tetrachloroethene	BDL	28	ug/kg		1	EPA 8260A
108883	Toluene	BDL	28	ug/kg		1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	28	ug/kg		1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	28	ug/kg		1	EPA 8260A
79016	Trichloroethene	BDL	28	ug/kg		1	EPA 8260A
75694	Trichlorofluoromethane	BDL	28	ug/kg		1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	28	ug/kg		1	EPA 8260A
108054	Vinyl acetate	BDL	56	ug/kg		1	EPA 8260A
75014	Vinyl chloride	BDL	56	ug/kg		1	EPA 8260A
1330207	Xylenes	96	28	ug/kg		1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>							
59507	4-Chloro-3-methylphenol	BDL	1800	ug/kg		1	EPA 8270B
95578	2-Chlorophenol	BDL	1800	ug/kg		1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	1800	ug/kg		1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	1800	ug/kg		1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	1800	ug/kg		1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	9400	ug/kg		1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	9400	ug/kg		1	EPA 8270B
95487	2-Methylphenol	BDL	1800	ug/kg		1	EPA 8270B
108394	3-Methylphenol	BDL	1800	ug/kg		1	EPA 8270B
106445	4-Methylphenol	2700	1800	ug/kg		1	EPA 8270B
88755	2-Nitrophenol	BDL	1800	ug/kg		1	EPA 8270B
100027	4-Nitrophenol	BDL	9400	ug/kg		1	EPA 8270B
87865	Pentachlorophenol	BDL	1800	ug/kg		1	EPA 8270B
108952	Phenol	BDL	1800	ug/kg		1	EPA 8270B

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-23-SM0001, 06/19/97, 14:40, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	1800	ug/kg		1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	1800	ug/kg		1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	9400	ug/kg		1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>							
83329	Acenaphthene	BDL	1800	ug/kg		1	EPA 8270B
208968	Acenaphthylene	2000	1800	ug/kg		1	EPA 8270B
120127	Anthracene	BDL	1800	ug/kg		1	EPA 8270B
56553	Benzo(a)anthracene	7800	1800	ug/kg		1	EPA 8270B
205992	Benzo(b)fluoranthene	6100	1800	ug/kg		1	EPA 8270B
207089	Benzo(k)fluoranthene	6100	1800	ug/kg		1	EPA 8270B
191242	Benzo(ghi)perylene	7200	1800	ug/kg		1	EPA 8270B
50328	Benzo(a)pyrene	7200	1800	ug/kg		1	EPA 8270B
100516	Benzyl Alcohol	BDL	1800	ug/kg		1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	1800	ug/kg		1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	1800	ug/kg		1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	1800	ug/kg		1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	1800	ug/kg		1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	1800	ug/kg		1	EPA 8270B
106478	p-Chloroaniline	BDL	1800	ug/kg		1	EPA 8270B
106478	2-Chloronaphthalene	BDL	1800	ug/kg		1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	1800	ug/kg		1	EPA 8270B
218019	Chrysene	6100	1800	ug/kg		1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	1800	ug/kg		1	EPA 8270B
132649	Dibenzofuran	BDL	1800	ug/kg		1	EPA 8270B
84742	Di-n-butylphthalate	BDL	1800	ug/kg		1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	1800	ug/kg		1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	1800	ug/kg		1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	1800	ug/kg		1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	9400	ug/kg		1	EPA 8270B
84662	Diethylphthalate	BDL	1800	ug/kg		1	EPA 8270B
131113	Dimethylphthalate	BDL	1800	ug/kg		1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	1800	ug/kg		1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	1800	ug/kg		1	EPA 8270B
117840	Di-n-octylphthalate	BDL	1800	ug/kg		1	EPA 8270B
206440	Fluoranthene	7200	1800	ug/kg		1	EPA 8270B
86737	Fluorene	BDL	1800	ug/kg		1	EPA 8270B
118741	Hexachlorobenzene	BDL	1800	ug/kg		1	EPA 8270B
87683	Hexachlorobutadiene	BDL	1800	ug/kg		1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	1800	ug/kg		1	EPA 8270B
67721	Hexachloroethane	BDL	1800	ug/kg		1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	6700	1800	ug/kg		1	EPA 8270B
106591	Isophorone	BDL	1800	ug/kg		1	EPA 8270B
106591	2-Methylnaphthalene	BDL	1800	ug/kg		1	EPA 8270B
91203	Naphthalene	BDL	1800	ug/kg		1	EPA 8270B
88744	2-Nitroaniline	BDL	1800	ug/kg		1	EPA 8270B
99092	3-Nitroaniline	BDL	1800	ug/kg		1	EPA 8270B

BDL - Below Detection Limits

## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-23-SM0001, 06/19/97, 14:40, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	1800	ug/kg		1	EPA 8270B
98953	Nitrobenzene	BDL	1800	ug/kg		1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	1800	ug/kg		1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	1800	ug/kg		1	EPA 8270B
85018	Phenanthrene	2600	1800	ug/kg		1	EPA 8270B
129000	Pyrene	7200	1800	ug/kg		1	EPA 8270B
110861	Pyridine	BDL	1800	ug/kg		1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	1800	ug/kg		1	EPA 8270B
<b>Toxicity Characteristic Leaching Procedure (EPA 1311)</b>							
7440382	D004 Arsenic	BDL	2.5	mg/l	5.0	1	EPA 1311
7440393	D005 Barium	12	0.1	mg/l	100.0	1	EPA 1311
7440439	D006 Cadmium	BDL	0.01	mg/l	1.0	1	EPA 1311
5103719	D020 alpha-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
5564347	D020 gamma-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
7440473	D007 Chromium	BDL	0.03	mg/l	5.0	1	EPA 1311
	D026 Total Cresol	BDL	0.05	mg/l	200.0	1	EPA 1311
94757	D016 2,4-D	BDL	0.05	mg/l	10.0	1	EPA 1311
106467	D027 1,4-Dichlorobenzene	BDL	0.05	mg/l	7.5	1	EPA 1311
121142	D030 2,4-Dinitrotoluene	BDL	0.05	mg/l	0.13	1	EPA 1311
72208	D012 Endrin	BDL	0.001	mg/l	0.02	1	EPA 1311
76448	D031 Heptachlor	BDL	0.001	mg/l	0.008	1	EPA 1311
1024573	D031 Heptachlor epoxide	BDL	0.001	mg/l	0.008	1	EPA 1311
118741	D032 Hexachlorobenzene	BDL	0.05	mg/l	0.13	1	EPA 1311
87683	D033 Hexachlorobutadiene	BDL	0.05	mg/l	0.5	1	EPA 1311
67721	D034 Hexachloroethane	BDL	0.05	mg/l	3.0	1	EPA 1311
7439921	D008 Lead	BDL	0.1	mg/l	5.0	1	EPA 1311
58899	D013 Lindane	BDL	0.01	mg/l	0.4	1	EPA 1311
7439976	D009 Mercury	BDL	0.005	mg/l	0.2	1	EPA 1311
72435	D014 Methoxychlor	BDL	0.5	mg/l	10.0	1	EPA 1311
98953	D036 Nitrobenzene	BDL	0.05	mg/l	2.0	1	EPA 1311
87865	D037 Pentachlorophenol	BDL	0.05	mg/l	100.0	1	EPA 1311
7782492	D010 Selenium	BDL	0.5	mg/l	1.0	1	EPA 1311
7440224	D011 Silver	BDL	0.01	mg/l	5.0	1	EPA 1311
8001352	D015 Toxaphene	BDL	0.05	mg/l	0.5	1	EPA 1311
95954	D041 2,4,5-Trichlorophenol	BDL	0.05	mg/l	400.0	1	EPA 1311
88062	D042 2,4,6-Trichlorophenol	BDL	0.05	mg/l	2.0	1	EPA 1311
93721	D017 2,4,5-TP Silvex	BDL	0.1	mg/l	1.0	1	EPA 1311
110861	D038 Pyridine	BDL	0.05	mg/l	5.0	1	EPA 1311
<b>Zero Headspace Extraction (ZHE)</b>							
71432	D018 Benzene	BDL	0.02	mg/l	0.5	1	EPA 1311
56235	D019 Carbon tetrachloride	BDL	0.02	mg/l	0.5	1	EPA 1311
108907	D021 Chlorobenzene	BDL	0.02	mg/l	100.0	1	EPA 1311
67663	D022 Chloroform	BDL	0.02	mg/l	6.0	1	EPA 1311
107062	D028 1,2-Dichloroethane	BDL	0.02	mg/l	0.5	1	EPA 1311
75354	D029 1,1-Dichloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
78933	D035 Methyl ethyl ketone	BDL	0.5	mg/l	200.0	1	EPA 1311

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis


**Sample Description**

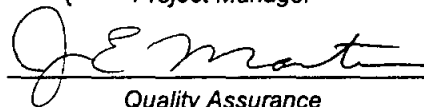
Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-23-SM0001, 06/19/97, 14:40, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
127184	D039 Tetrachloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
79016	D040 Trichloroethene	BDL	0.02	mg/l	0.5	1	EPA 1311
75014	D043 Vinyl chloride	BDL	0.02	mg/l	0.2	1	EPA 1311

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P. Griffin

Report No.: 84273-12

July 24, 1997

### Sample Description

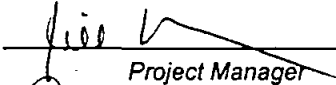
Sloss Industries


Sludge, G & M Project #TF0320.015, 970619-LD-23-SM0001MS, 06/19/97, 14:40, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
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Extra sample for QC

Respectfully submitted,

  
Project Manager

  
Quality Assurance





# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P. Griffin

Report No.: **84273-13**

July 24, 1997

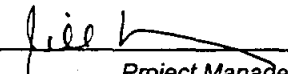
### Sample Description

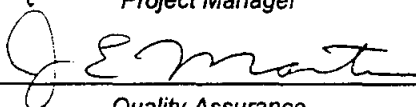
Sloss Industries

Sludge, G & M Project #TF0320.015, 970619-LD-23-SM0001MSD, 06/19/97, 14:40, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Extra sample for QC						

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P. Griffin

Report No.: 84273-14

July 24, 1997

### Sample Description

Sloss Industries

Sludge, G & M Project #TF0320.015, 970619-LD-23-SM0002, 06/19/97, 15:30, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
57125	Moisture	88.7	0.03	%		1	
	Total Cyanide	BDL	1.8	mg/kg		1	EPA 9010A
Priority Pollutant Metals							
Metals							
7440360	Total Antimony	BDL	44	mg/kg		1	EPA 6010A
7440382	Total Arsenic	11.5	8.8	mg/kg		1	EPA 7060A
7440393	Total Barium	450	9.1	mg/kg		1	EPA 6010A
7440417	Total Beryllium	BDL	4.6	mg/kg		1	EPA 6010A
7440439	Total Cadmium	BDL	4.6	mg/kg		1	EPA 6010A
7440473	Total Chromium	130	9.1	mg/kg		1	EPA 6010A
7440508	Total Copper	110	18	mg/kg		1	EPA 6010A
7439921	Total Lead	51	22	mg/kg		1	EPA 6010A
7439976	Total Mercury	8.6	2.2	mg/kg		1	EPA 7471
7440020	Total Nickel	140	18	mg/kg		1	EPA 6010A
7782492	Total Selenium	150	35	mg/kg		1	EPA 7740
7440224	Total Silver	8.0	9.1	mg/kg		1	EPA 6010A
7440280	Total Thallium	BDL	35	mg/kg		1	EPA 7841
7440666	Total Zinc	300	18	mg/kg		1	EPA 6010A
Volatile Organics (EPA 8260A)							
67641	Acetone	BDL	2300	ug/kg		5	EPA 8260A
107028	Acrolein	BDL	2300	ug/kg		5	EPA 8260A
107131	Acrylonitrile	BDL	2300	ug/kg		5	EPA 8260A
71432	Benzene	BDL	230	ug/kg		5	EPA 8260A
75274	Bromodichloromethane	BDL	230	ug/kg		5	EPA 8260A
75252	Bromoform	BDL	230	ug/kg		5	EPA 8260A
74839	Bromomethane	BDL	450	ug/kg		5	EPA 8260A
75150	Carbon disulfide	BDL	230	ug/kg		5	EPA 8260A
56235	Carbon tetrachloride	BDL	230	ug/kg		5	EPA 8260A
108907	Chlorobenzene	BDL	230	ug/kg		5	EPA 8260A
75003	Chloroethane	BDL	230	ug/kg		5	EPA 8260A
67663	Chloroform	BDL	230	ug/kg		5	EPA 8260A
74873	Chloromethane	BDL	450	ug/kg		5	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	450	ug/kg		5	EPA 8260A

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

0262

## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-23-SM0002, 06/19/97, 15:30, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	230	ug/kg		5	EPA 8260A
106934	1,2-Dibromoethane	BDL	230	ug/kg		5	EPA 8260A
74953	Dibromomethane	BDL	230	ug/kg		5	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	450	ug/kg		5	EPA 8260A
75718	Dichlorodifluoromethane	BDL	230	ug/kg		5	EPA 8260A
75343	1,1-Dichloroethane	BDL	230	ug/kg		5	EPA 8260A
107062	1,2-Dichloroethane	BDL	230	ug/kg		5	EPA 8260A
75354	1,1-Dichloroethene	BDL	230	ug/kg		5	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	230	ug/kg		5	EPA 8260A
78875	1,2-Dichloropropane	BDL	230	ug/kg		5	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	230	ug/kg		5	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	230	ug/kg		5	EPA 8260A
100414	Ethylbenzene	BDL	230	ug/kg		5	EPA 8260A
97632	Ethyl methacrylate	BDL	230	ug/kg		5	EPA 8260A
591786	2-Hexanone	BDL	2300	ug/kg		5	EPA 8260A
74884	Iodomethane	BDL	230	ug/kg		5	EPA 8260A
78933	2-Butanone	BDL	2300	ug/kg		5	EPA 8260A
75092	Methylene chloride	BDL	230	ug/kg		5	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	2300	ug/kg		5	EPA 8260A
1000125	Styrene	BDL	230	ug/kg		5	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	230	ug/kg		5	EPA 8260A
127184	Tetrachloroethene	BDL	230	ug/kg		5	EPA 8260A
108883	Toluene	5100	230	ug/kg		5	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	230	ug/kg		5	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	230	ug/kg		5	EPA 8260A
79016	Trichloroethene	BDL	230	ug/kg		5	EPA 8260A
75694	Trichlorofluoromethane	BDL	230	ug/kg		5	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	230	ug/kg		5	EPA 8260A
108054	Vinyl acetate	BDL	450	ug/kg		5	EPA 8260A
75014	Vinyl chloride	BDL	450	ug/kg		5	EPA 8260A
1330207	Xylenes	650	230	ug/kg		5	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>							
59507	4-Chloro-3-methylphenol	BDL	3000	ug/kg		1	EPA 8270B
95578	2-Chlorophenol	BDL	3000	ug/kg		1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	3000	ug/kg		1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	3000	ug/kg		1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	3000	ug/kg		1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	15000	ug/kg		1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	15000	ug/kg		1	EPA 8270B
95487	2-Methylphenol	BDL	3000	ug/kg		1	EPA 8270B
108394	3-Methylphenol	BDL	3000	ug/kg		1	EPA 8270B
106445	4-Methylphenol	BDL	3000	ug/kg		1	EPA 8270B
55	2-Nitrophenol	BDL	3000	ug/kg		1	EPA 8270B
100027	4-Nitrophenol	BDL	15000	ug/kg		1	EPA 8270B
87865	Pentachlorophenol	BDL	3000	ug/kg		1	EPA 8270B
108952	Phenol	BDL	3000	ug/kg		1	EPA 8270B

BDL - Below Detection Limits

All results other than TOLP are reported on a dry weight basis

## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-23-SM0002, 06/19/97, 15:30, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	3000	ug/kg		1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	3000	ug/kg		1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	15000	ug/kg		1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>							
83329	Acenaphthene	BDL	3000	ug/kg		1	EPA 8270B
208968	Acenaphthylene	11000	3000	ug/kg		1	EPA 8270B
120127	Anthracene	3800	3000	ug/kg		1	EPA 8270B
56553	Benzo(a)anthracene	27000	3000	ug/kg		1	EPA 8270B
205992	Benzo(b)fluoranthene	30000	3000	ug/kg		1	EPA 8270B
207089	Benzo(k)fluoranthene	21000	3000	ug/kg		1	EPA 8270B
191242	Benzo(ghi)perylene	24000	3000	ug/kg		1	EPA 8270B
50328	Benzo(a)pyrene	31000	3000	ug/kg		1	EPA 8270B
100516	Benzyl Alcohol	BDL	3000	ug/kg		1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	3000	ug/kg		1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	3000	ug/kg		1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	3000	ug/kg		1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	3000	ug/kg		1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	3000	ug/kg		1	EPA 8270B
106478	p-Chloroaniline	BDL	3000	ug/kg		1	EPA 8270B
91587	2-Chloronaphthalene	BDL	3000	ug/kg		1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	3000	ug/kg		1	EPA 8270B
218019	Chrysene	16000	3000	ug/kg		1	EPA 8270B
53703	Dibenz(a,h)anthracene	3200	3000	ug/kg		1	EPA 8270B
132649	Dibenzofuran	BDL	3000	ug/kg		1	EPA 8270B
84742	Di-n-butylphthalate	BDL	3000	ug/kg		1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	3000	ug/kg		1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	3000	ug/kg		1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	3000	ug/kg		1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	15000	ug/kg		1	EPA 8270B
84662	Diethylphthalate	BDL	3000	ug/kg		1	EPA 8270B
131113	Dimethylphthalate	BDL	3000	ug/kg		1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	3000	ug/kg		1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	3000	ug/kg		1	EPA 8270B
117840	Di-n-octylphthalate	BDL	3000	ug/kg		1	EPA 8270B
206440	Fluoranthene	25000	3000	ug/kg		1	EPA 8270B
86737	Fluorene	5400	3000	ug/kg		1	EPA 8270B
118741	Hexachlorobenzene	BDL	3000	ug/kg		1	EPA 8270B
87683	Hexachlorobutadiene	BDL	3000	ug/kg		1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	3000	ug/kg		1	EPA 8270B
67721	Hexachloroethane	BDL	3000	ug/kg		1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	21000	3000	ug/kg		1	EPA 8270B
78591	Isophorone	BDL	3000	ug/kg		1	EPA 8270B
91576	2-Methylnaphthalene	BDL	3000	ug/kg		1	EPA 8270B
91203	Naphthalene	BDL	3000	ug/kg		1	EPA 8270B
88744	2-Nitroaniline	BDL	3000	ug/kg		1	EPA 8270B
99092	3-Nitroaniline	BDL	3000	ug/kg		1	EPA 8270B

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

0264

**Sample Description**

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-23-SM0002, 06/19/97, 15:30, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	3000	ug/kg		1	EPA 8270B
98953	Nitrobenzene	BDL	3000	ug/kg		1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	3000	ug/kg		1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	3000	ug/kg		1	EPA 8270B
85018	Phenanthrene	14000	3000	ug/kg		1	EPA 8270B
129000	Pyrene	19000	3000	ug/kg		1	EPA 8270B
110861	Pyridine	BDL	3000	ug/kg		1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	3000	ug/kg		1	EPA 8270B
<b>Toxicity Characteristic Leaching Procedure (EPA 1311)</b>							
7440382	D004 Arsenic	BDL	2.5	mg/l	5.0	1	EPA 1311
7440393	D005 Barium	18	0.3	mg/l	100.0	1	EPA 1311
7440439	D006 Cadmium	BDL	0.01	mg/l	1.0	1	EPA 1311
5103719	D020 alpha-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
5564347	D020 gamma-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
7440473	D007 Chromium	0.18	0.01	mg/l	5.0	1	EPA 1311
	D026 Total Cresol	BDL	0.05	mg/l	200.0	1	EPA 1311
94757	D016 2,4-D	BDL	0.05	mg/l	10.0	1	EPA 1311
106467	D027 1,4-Dichlorobenzene	BDL	0.05	mg/l	7.5	1	EPA 1311
121142	D030 2,4-Dinitrotoluene	BDL	0.05	mg/l	0.13	1	EPA 1311
108	D012 Endrin	BDL	0.001	mg/l	0.02	1	EPA 1311
16448	D031 Heptachlor	BDL	0.001	mg/l	0.008	1	EPA 1311
1024573	D031 Heptachlor epoxide	BDL	0.001	mg/l	0.008	1	EPA 1311
118741	D032 Hexachlorobenzene	BDL	0.05	mg/l	0.13	1	EPA 1311
87683	D033 Hexachlorobutadiene	BDL	0.05	mg/l	0.5	1	EPA 1311
67721	D034 Hexachloroethane	BDL	0.05	mg/l	3.0	1	EPA 1311
7439921	D008 Lead	BDL	0.1	mg/l	5.0	1	EPA 1311
58899	D013 Lindane	BDL	0.01	mg/l	0.4	1	EPA 1311
7439976	D009 Mercury	BDL	0.005	mg/l	0.2	1	EPA 1311
72435	D014 Methoxychlor	BDL	0.5	mg/l	10.0	1	EPA 1311
98953	D036 Nitrobenzene	BDL	0.05	mg/l	2.0	1	EPA 1311
87865	D037 Pentachlorophenol	BDL	0.05	mg/l	100.0	1	EPA 1311
7782492	D010 Selenium	BDL	0.5	mg/l	1.0	1	EPA 1311
7440224	D011 Silver	BDL	0.01	mg/l	5.0	1	EPA 1311
8001352	D015 Toxaphene	BDL	0.05	mg/l	0.5	1	EPA 1311
95954	D041 2,4,5-Trichlorophenol	BDL	0.05	mg/l	400.0	1	EPA 1311
88062	D042 2,4,6-Trichlorophenol	BDL	0.05	mg/l	2.0	1	EPA 1311
93721	D017 2,4,5-TP Silvex	BDL	0.1	mg/l	1.0	1	EPA 1311
110861	D038 Pyridine	BDL	0.05	mg/l	5.0	1	EPA 1311
<b>Zero Headspace Extraction (ZHE)</b>							
71432	D018 Benzene	BDL	0.02	mg/l	0.5	1	EPA 1311
56235	D019 Carbon tetrachloride	BDL	0.02	mg/l	0.5	1	EPA 1311
108907	D021 Chlorobenzene	BDL	0.02	mg/l	100.0	1	EPA 1311
163	D022 Chloroform	BDL	0.02	mg/l	6.0	1	EPA 1311
107062	D028 1,2-Dichloroethane	BDL	0.02	mg/l	0.5	1	EPA 1311
75354	D029 1,1-Dichloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
78933	D035 Methyl ethyl ketone	BDL	0.5	mg/l	200.0	1	EPA 1311

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

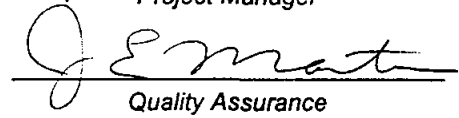
**Sample Description**

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-23-SM0002, 06/19/97, 15:30, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
127184	D039 Tetrachloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
79016	D040 Trichloroethene	BDL	0.02	mg/l	0.5	1	EPA 1311
75014	D043 Vinyl chloride	BDL	0.02	mg/l	0.2	1	EPA 1311

Respectfully submitted,

  
Project Manager  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P. Griffin  
Report No.: 84273-15

July 24, 1997

### Sample Description

Sloss Industries

Sludge, G & M Project #TF0320.015, 970619-LD-23-SM0003, 06/19/97, 15:55, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
57125	Moisture	79.4	0.03	%		1	
	Total Cyanide	136	1.0	mg/kg		1	EPA 9010A
Priority Pollutant Metals							
Metals							
7440360	Total Antimony	BDL	25	mg/kg		1	EPA 6010A
7440382	Total Arsenic	42	4.9	mg/kg		1	EPA 7060A
40393	Total Barium	390	4.9	mg/kg		1	EPA 6010A
7440417	Total Beryllium	BDL	2.4	mg/kg		1	EPA 6010A
7440439	Total Cadmium	BDL	2.4	mg/kg		1	EPA 6010A
7440473	Total Chromium	190	4.9	mg/kg		1	EPA 6010A
7440508	Total Copper	240	9.8	mg/kg		1	EPA 6010A
7439921	Total Lead	50	12	mg/kg		1	EPA 6010A
7439976	Total Mercury	7.7	1.2	mg/kg		1	EPA 7471
7440020	Total Nickel	270	9.8	mg/kg		1	EPA 6010A
7782492	Total Selenium	117	19	mg/kg		1	EPA 7740
7440224	Total Silver	5.7	4.9	mg/kg		1	EPA 6010A
7440280	Total Thallium	BDL	19	mg/kg		1	EPA 7841
7440666	Total Zinc	280	9.8	mg/kg		1	EPA 6010A
Volatile Organics (EPA 8260A)							
67641	Acetone	670	240	ug/kg		1	EPA 8260A
107028	Acrolein	BDL	240	ug/kg		1	EPA 8260A
107131	Acrylonitrile	BDL	240	ug/kg		1	EPA 8260A
71432	Benzene	BDL	24	ug/kg		1	EPA 8260A
75274	Bromodichloromethane	BDL	24	ug/kg		1	EPA 8260A
75252	Bromoform	BDL	24	ug/kg		1	EPA 8260A
74839	Bromomethane	BDL	48	ug/kg		1	EPA 8260A
75150	Carbon disulfide	BDL	24	ug/kg		1	EPA 8260A
56235	Carbon tetrachloride	BDL	24	ug/kg		1	EPA 8260A
108907	Chlorobenzene	BDL	24	ug/kg		1	EPA 8260A
1003	Chloroethane	BDL	24	ug/kg		1	EPA 8260A
67663	Chloroform	BDL	24	ug/kg		1	EPA 8260A
74873	Chloromethane	BDL	48	ug/kg		1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	48	ug/kg		1	EPA 8260A

BDL - Below Detection Limits

0267

## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-23-SM0003, 06/19/97, 15:55, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	24	ug/kg		1	EPA 8260A
106934	1,2-Dibromoethane	BDL	24	ug/kg		1	EPA 8260A
74953	Dibromomethane	BDL	24	ug/kg		1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	48	ug/kg		1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	24	ug/kg		1	EPA 8260A
75343	1,1-Dichloroethane	BDL	24	ug/kg		1	EPA 8260A
107062	1,2-Dichloroethane	BDL	24	ug/kg		1	EPA 8260A
75354	1,1-Dichloroethene	BDL	24	ug/kg		1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	24	ug/kg		1	EPA 8260A
78875	1,2-Dichloropropane	BDL	24	ug/kg		1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	24	ug/kg		1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	24	ug/kg		1	EPA 8260A
100414	Ethylbenzene	BDL	24	ug/kg		1	EPA 8260A
97632	Ethyl methacrylate	BDL	24	ug/kg		1	EPA 8260A
591786	2-Hexanone	BDL	240	ug/kg		1	EPA 8260A
74884	Iodomethane	BDL	24	ug/kg		1	EPA 8260A
78933	2-Butanone	250	240	ug/kg		1	EPA 8260A
75092	Methylene chloride	BDL	24	ug/kg		1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	240	ug/kg		1	EPA 8260A
100425	Styrene	BDL	24	ug/kg		1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	24	ug/kg		1	EPA 8260A
127184	Tetrachloroethene	BDL	24	ug/kg		1	EPA 8260A
108883	Toluene	200	24	ug/kg		1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	24	ug/kg		1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	24	ug/kg		1	EPA 8260A
79016	Trichloroethene	BDL	24	ug/kg		1	EPA 8260A
75694	Trichlorofluoromethane	BDL	24	ug/kg		1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	24	ug/kg		1	EPA 8260A
108054	Vinyl acetate	BDL	48	ug/kg		1	EPA 8260A
75014	Vinyl chloride	BDL	48	ug/kg		1	EPA 8260A
1330207	Xylenes	BDL	24	ug/kg		1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>							
59507	4-Chloro-3-methylphenol	BDL	1600	ug/kg		1	EPA 8270B
95578	2-Chlorophenol	BDL	1600	ug/kg		1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	1600	ug/kg		1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	1600	ug/kg		1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	1600	ug/kg		1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	8100	ug/kg		1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	8100	ug/kg		1	EPA 8270B
95487	2-Methylphenol	BDL	1600	ug/kg		1	EPA 8270B
108394	3-Methylphenol	BDL	1600	ug/kg		1	EPA 8270B
106445	4-Methylphenol	3000	1600	ug/kg		1	EPA 8270B
88755	2-Nitrophenol	BDL	1600	ug/kg		1	EPA 8270B
100027	4-Nitrophenol	BDL	8100	ug/kg		1	EPA 8270B
87865	Pentachlorophenol	BDL	1600	ug/kg		1	EPA 8270B
108952	Phenol	BDL	1600	ug/kg		1	EPA 8270B

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis



## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-23-SM0003, 06/19/97, 15:55, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	1600	ug/kg		1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	1600	ug/kg		1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	8100	ug/kg		1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>							
83329	Acenaphthene	BDL	1600	ug/kg		1	EPA 8270B
208968	Acenaphthylene	8100	1600	ug/kg		1	EPA 8270B
120127	Anthracene	BDL	1600	ug/kg		1	EPA 8270B
56553	Benzo(a)anthracene	45000	1600	ug/kg		1	EPA 8270B
205992	Benzo(b)fluoranthene	57000	1600	ug/kg		1	EPA 8270B
207089	Benzo(k)fluoranthene	27000	1600	ug/kg		1	EPA 8270B
191242	Benzo(ghi)perylene	40000	1600	ug/kg		1	EPA 8270B
50328	Benzo(a)pyrene	47000	1600	ug/kg		1	EPA 8270B
100516	Benzyl Alcohol	BDL	1600	ug/kg		1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	1600	ug/kg		1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	1600	ug/kg		1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	1600	ug/kg		1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	1600	ug/kg		1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	1600	ug/kg		1	EPA 8270B
106478	p-Chloroaniline	BDL	1600	ug/kg		1	EPA 8270B
7777	2-Chloronaphthalene	BDL	1600	ug/kg		1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	1600	ug/kg		1	EPA 8270B
218019	Chrysene	39000	1600	ug/kg		1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	1600	ug/kg		1	EPA 8270B
132649	Dibenzofuran	BDL	1600	ug/kg		1	EPA 8270B
84742	Di-n-butylphthalate	BDL	1600	ug/kg		1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	1600	ug/kg		1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	1600	ug/kg		1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	1600	ug/kg		1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	8100	ug/kg		1	EPA 8270B
84662	Diethylphthalate	BDL	1600	ug/kg		1	EPA 8270B
131113	Dimethylphthalate	BDL	1600	ug/kg		1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	1600	ug/kg		1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	1600	ug/kg		1	EPA 8270B
117840	Di-n-octylphthalate	BDL	1600	ug/kg		1	EPA 8270B
206440	Fluoranthene	24000	1600	ug/kg		1	EPA 8270B
86737	Fluorene	BDL	1600	ug/kg		1	EPA 8270B
118741	Hexachlorobenzene	BDL	1600	ug/kg		1	EPA 8270B
87683	Hexachlorobutadiene	BDL	1600	ug/kg		1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	1600	ug/kg		1	EPA 8270B
67721	Hexachloroethane	BDL	1600	ug/kg		1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	39000	1600	ug/kg		1	EPA 8270B
78591	Isophorone	BDL	1600	ug/kg		1	EPA 8270B
7776	2-Methylnaphthalene	BDL	1600	ug/kg		1	EPA 8270B
91203	Naphthalene	BDL	1600	ug/kg		1	EPA 8270B
88744	2-Nitroaniline	BDL	1600	ug/kg		1	EPA 8270B
99092	3-Nitroaniline	BDL	1600	ug/kg		1	EPA 8270B

BDL - Below Detection Limits

0269

**Sample Description**

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-23-SM0003, 06/19/97, 15:55, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	1600	ug/kg		1	EPA 8270B
98953	Nitrobenzene	BDL	1600	ug/kg		1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	1600	ug/kg		1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	1600	ug/kg		1	EPA 8270B
85018	Phenanthrene	BDL	1600	ug/kg		1	EPA 8270B
129000	Pyrene	31000	1600	ug/kg		1	EPA 8270B
110861	Pyridine	BDL	1600	ug/kg		1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	1600	ug/kg		1	EPA 8270B
<b>Toxicity Characteristic Leaching Procedure (EPA 1311)</b>							
7440382	D004 Arsenic	BDL	2.5	mg/l	5.0	1	EPA 1311
7440393	D005 Barium	7.6	0.3	mg/l	100.0	1	EPA 1311
7440439	D006 Cadmium	BDL	0.01	mg/l	1.0	1	EPA 1311
5103719	D020 alpha-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
5564347	D020 gamma-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
7440473	D007 Chromium	BDL	0.01	mg/l	5.0	1	EPA 1311
	D026 Total Cresol	BDL	0.05	mg/l	200.0	1	EPA 1311
94757	D016 2,4-D	BDL	0.05	mg/l	10.0	1	EPA 1311
106467	D027 1,4-Dichlorobenzene	BDL	0.05	mg/l	7.5	1	EPA 1311
121142	D030 2,4-Dinitrotoluene	BDL	0.05	mg/l	0.13	1	EPA 1311
72208	D012 Endrin	BDL	0.001	mg/l	0.02	1	EPA 1311
76448	D031 Heptachlor	BDL	0.001	mg/l	0.008	1	EPA 1311
1024573	D031 Heptachlor epoxide	BDL	0.001	mg/l	0.008	1	EPA 1311
118741	D032 Hexachlorobenzene	BDL	0.05	mg/l	0.13	1	EPA 1311
87683	D033 Hexachlorobutadiene	BDL	0.05	mg/l	0.5	1	EPA 1311
67721	D034 Hexachloroethane	BDL	0.05	mg/l	3.0	1	EPA 1311
7439921	D008 Lead	BDL	0.1	mg/l	5.0	1	EPA 1311
58899	D013 Lindane	BDL	0.01	mg/l	0.4	1	EPA 1311
7439976	D009 Mercury	BDL	0.005	mg/l	0.2	1	EPA 1311
72435	D014 Methoxychlor	BDL	0.5	mg/l	10.0	1	EPA 1311
98953	D036 Nitrobenzene	BDL	0.05	mg/l	2.0	1	EPA 1311
87865	D037 Pentachlorophenol	BDL	0.05	mg/l	100.0	1	EPA 1311
7782492	D010 Selenium	BDL	0.5	mg/l	1.0	1	EPA 1311
7440224	D011 Silver	BDL	0.01	mg/l	5.0	1	EPA 1311
8001352	D015 Toxaphene	BDL	0.05	mg/l	0.5	1	EPA 1311
95954	D041 2,4,5-Trichlorophenol	BDL	0.05	mg/l	400.0	1	EPA 1311
88062	D042 2,4,6-Trichlorophenol	BDL	0.05	mg/l	2.0	1	EPA 1311
93721	D017 2,4,5-TP Silvex	BDL	0.1	mg/l	1.0	1	EPA 1311
110861	D038 Pyridine	BDL	0.05	mg/l	5.0	1	EPA 1311
<b>Zero Headspace Extraction (ZHE)</b>							
71432	D018 Benzene	BDL	0.02	mg/l	0.5	1	EPA 1311
56235	D019 Carbon tetrachloride	BDL	0.02	mg/l	0.5	1	EPA 1311
108907	D021 Chlorobenzene	BDL	0.02	mg/l	100.0	1	EPA 1311
67663	D022 Chloroform	BDL	0.02	mg/l	6.0	1	EPA 1311
107062	D028 1,2-Dichloroethane	BDL	0.02	mg/l	0.5	1	EPA 1311
75354	D029 1,1-Dichloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
78933	D035 Methyl ethyl ketone	BDL	0.5	mg/l	200.0	1	EPA 1311

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

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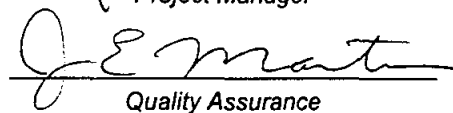
## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-23-SM0003, 06/19/97, 15:55, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
127184	D039 Tetrachloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
79016	D040 Trichloroethene	BDL	0.02	mg/l	0.5	1	EPA 1311
75014	D043 Vinyl chloride	BDL	0.02	mg/l	0.2	1	EPA 1311

Respectfully submitted,

  
Project Manager  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P. Griffin

Report No.: 84273-16

July 24, 1997

### Sample Description

Sloss Industries

Sludge, G & M Project #TF0320.015, 970619-LD-23-SM0004, 06/19/97, 16:05, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
57125	Moisture	83.3	0.02	%		1	
	Total Cyanide	4.0	1.2	mg/kg		1	EPA 9010A
Priority Pollutant Metals							
Metals							
7440360	Total Antimony	BDL	30	mg/kg		1	EPA 6010A
7440382	Total Arsenic	BDL	6.0	mg/kg		1	EPA 7060A
7440393	Total Barium	250	6.0	mg/kg		1	EPA 6010A
7440417	Total Beryllium	BDL	3.0	mg/kg		1	EPA 6010A
7440439	Total Cadmium	BDL	3.0	mg/kg		1	EPA 6010A
7440473	Total Chromium	130	3.0	mg/kg		1	EPA 6010A
7440508	Total Copper	87	12	mg/kg		1	EPA 6010A
7439921	Total Lead	35	15	mg/kg		1	EPA 6010A
7439976	Total Mercury	7.2	1.5	mg/kg		1	EPA 7471
7440020	Total Nickel	200	12	mg/kg		1	EPA 6010A
7782492	Total Selenium	62	24	mg/kg		1	EPA 7740
7440224	Total Silver	BDL	6.0	mg/kg		1	EPA 6010A
7440280	Total Thallium	BDL	24	mg/kg		1	EPA 7841
7440666	Total Zinc	220	12	mg/kg		1	EPA 6010A
Volatile Organics (EPA 8260A)							
67641	Acetone	BDL	1500	ug/kg		5	EPA 8260A
107028	Acrolein	BDL	1500	ug/kg		5	EPA 8260A
107131	Acrylonitrile	BDL	1500	ug/kg		5	EPA 8260A
71432	Benzene	BDL	150	ug/kg		5	EPA 8260A
75274	Bromodichloromethane	BDL	150	ug/kg		5	EPA 8260A
75252	Bromoform	BDL	150	ug/kg		5	EPA 8260A
74839	Bromomethane	BDL	300	ug/kg		5	EPA 8260A
75150	Carbon disulfide	BDL	150	ug/kg		5	EPA 8260A
56235	Carbon tetrachloride	BDL	150	ug/kg		5	EPA 8260A
108907	Chlorobenzene	BDL	150	ug/kg		5	EPA 8260A
75003	Chloroethane	BDL	150	ug/kg		5	EPA 8260A
67663	Chloroform	BDL	150	ug/kg		5	EPA 8260A
74873	Chloromethane	BDL	300	ug/kg		5	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	300	ug/kg		5	EPA 8260A

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

0272

## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-23-SM0004, 06/19/97, 16:05, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	150	ug/kg		5	EPA 8260A
106934	1,2-Dibromoethane	BDL	150	ug/kg		5	EPA 8260A
74953	Dibromomethane	BDL	150	ug/kg		5	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	300	ug/kg		5	EPA 8260A
75718	Dichlorodifluoromethane	BDL	150	ug/kg		5	EPA 8260A
75343	1,1-Dichloroethane	BDL	150	ug/kg		5	EPA 8260A
107062	1,2-Dichloroethane	BDL	150	ug/kg		5	EPA 8260A
75354	1,1-Dichloroethene	BDL	150	ug/kg		5	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	150	ug/kg		5	EPA 8260A
78875	1,2-Dichloropropane	BDL	150	ug/kg		5	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	150	ug/kg		5	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	150	ug/kg		5	EPA 8260A
100414	Ethylbenzene	220	150	ug/kg		5	EPA 8260A
97632	Ethyl methacrylate	BDL	150	ug/kg		5	EPA 8260A
591786	2-Hexanone	BDL	1500	ug/kg		5	EPA 8260A
74884	Iodomethane	BDL	150	ug/kg		5	EPA 8260A
78933	2-Butanone	BDL	1500	ug/kg		5	EPA 8260A
75092	Methylene chloride	BDL	150	ug/kg		5	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	1500	ug/kg		5	EPA 8260A
10425	Styrene	BDL	150	ug/kg		5	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	150	ug/kg		5	EPA 8260A
127184	Tetrachloroethene	BDL	150	ug/kg		5	EPA 8260A
108883	Toluene	520	150	ug/kg		5	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	150	ug/kg		5	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	150	ug/kg		5	EPA 8260A
79016	Trichloroethene	BDL	150	ug/kg		5	EPA 8260A
75694	Trichlorofluoromethane	BDL	150	ug/kg		5	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	150	ug/kg		5	EPA 8260A
108054	Vinyl acetate	BDL	300	ug/kg		5	EPA 8260A
75014	Vinyl chloride	BDL	300	ug/kg		5	EPA 8260A
1330207	Xylenes	900	150	ug/kg		5	EPA 8260A
Acid Extractable Organics (EPA 8270B)							
59507	4-Chloro-3-methylphenol	BDL	1900	ug/kg		1	EPA 8270B
95578	2-Chlorophenol	BDL	1900	ug/kg		1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	1900	ug/kg		1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	1900	ug/kg		1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	1900	ug/kg		1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	10000	ug/kg		1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	10000	ug/kg		1	EPA 8270B
95487	2-Methylphenol	BDL	1900	ug/kg		1	EPA 8270B
108394	3-Methylphenol	BDL	1900	ug/kg		1	EPA 8270B
106445	4-Methylphenol	10000	1900	ug/kg		1	EPA 8270B
1055	2-Nitrophenol	BDL	1900	ug/kg		1	EPA 8270B
100027	4-Nitrophenol	BDL	10000	ug/kg		1	EPA 8270B
87865	Pentachlorophenol	BDL	1900	ug/kg		1	EPA 8270B
108952	Phenol	BDL	1900	ug/kg		1	EPA 8270B

## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-23-SM0004, 06/19/97, 16:05, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	1900	ug/kg		1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	1900	ug/kg		1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10000	ug/kg		1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>							
83329	Acenaphthene	BDL	1900	ug/kg		1	EPA 8270B
208968	Acenaphthylene	2700	1900	ug/kg		1	EPA 8270B
120127	Anthracene	BDL	1900	ug/kg		1	EPA 8270B
56553	Benzo(a)anthracene	5300	1900	ug/kg		1	EPA 8270B
205992	Benzo(b)fluoranthene	3800	1900	ug/kg		1	EPA 8270B
207089	Benzo(k)fluoranthene	5300	1900	ug/kg		1	EPA 8270B
191242	Benzo(ghi)perylene	5000	1900	ug/kg		1	EPA 8270B
50328	Benzo(a)pyrene	6500	1900	ug/kg		1	EPA 8270B
100516	Benzyl Alcohol	BDL	1900	ug/kg		1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	1900	ug/kg		1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	1900	ug/kg		1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	1900	ug/kg		1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	1900	ug/kg		1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	1900	ug/kg		1	EPA 8270B
106478	p-Chloroaniline	BDL	1900	ug/kg		1	EPA 8270B
91587	2-Chloronaphthalene	BDL	1900	ug/kg		1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	1900	ug/kg		1	EPA 8270B
218019	Chrysene	3700	1900	ug/kg		1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	1900	ug/kg		1	EPA 8270B
132649	Dibenzofuran	BDL	1900	ug/kg		1	EPA 8270B
84742	Di-n-butylphthalate	BDL	1900	ug/kg		1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	1900	ug/kg		1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	1900	ug/kg		1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	1900	ug/kg		1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	10000	ug/kg		1	EPA 8270B
84662	Diethylphthalate	BDL	1900	ug/kg		1	EPA 8270B
131113	Dimethylphthalate	BDL	1900	ug/kg		1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	1900	ug/kg		1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	1900	ug/kg		1	EPA 8270B
117840	Di-n-octylphthalate	BDL	1900	ug/kg		1	EPA 8270B
206440	Fluoranthene	5700	1900	ug/kg		1	EPA 8270B
86737	Fluorene	BDL	1900	ug/kg		1	EPA 8270B
118741	Hexachlorobenzene	BDL	1900	ug/kg		1	EPA 8270B
87683	Hexachlorobutadiene	BDL	1900	ug/kg		1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	1900	ug/kg		1	EPA 8270B
67721	Hexachloroethane	BDL	1900	ug/kg		1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	5500	1900	ug/kg		1	EPA 8270B
78591	Isophorone	BDL	1900	ug/kg		1	EPA 8270B
91576	2-Methylnaphthalene	BDL	1900	ug/kg		1	EPA 8270B
91203	Naphthalene	4100	1900	ug/kg		1	EPA 8270B
88744	2-Nitroaniline	BDL	1900	ug/kg		1	EPA 8270B
99092	3-Nitroaniline	BDL	1900	ug/kg		1	EPA 8270B

BDL - Below Detection Limits

All results other than TCLP are reported on a dry weight basis

0274

## Sample Description

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-23-SM0004, 06/19/97, 16:05, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	1900	ug/kg		1	EPA 8270B
98953	Nitrobenzene	BDL	1900	ug/kg		1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	1900	ug/kg		1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	1900	ug/kg		1	EPA 8270B
85018	Phenanthrene	4400	1900	ug/kg		1	EPA 8270B
129000	Pyrene	3600	1900	ug/kg		1	EPA 8270B
110861	Pyridine	BDL	1900	ug/kg		1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	1900	ug/kg		1	EPA 8270B
<b>Toxicity Characteristic Leaching Procedure (EPA 1311)</b>							
7440382	D004 Arsenic	BDL	2.5	mg/l	5.0	1	EPA 1311
7440393	D005 Barium	3.5	0.3	mg/l	100.0	1	EPA 1311
7440439	D006 Cadmium	BDL	0.01	mg/l	1.0	1	EPA 1311
5103719	D020 alpha-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
5564347	D020 gamma-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
7440473	D007 Chromium	0.12	0.01	mg/l	5.0	1	EPA 1311
	D026 Total Cresol	BDL	0.05	mg/l	200.0	1	EPA 1311
94757	D016 2,4-D	BDL	0.05	mg/l	10.0	1	EPA 1311
106467	D027 1,4-Dichlorobenzene	BDL	0.05	mg/l	7.5	1	EPA 1311
121142	D030 2,4-Dinitrotoluene	BDL	0.05	mg/l	0.13	1	EPA 1311
108	D012 Endrin	BDL	0.001	mg/l	0.02	1	EPA 1311
76448	D031 Heptachlor	BDL	0.001	mg/l	0.008	1	EPA 1311
1024573	D031 Heptachlor epoxide	BDL	0.001	mg/l	0.008	1	EPA 1311
118741	D032 Hexachlorobenzene	BDL	0.05	mg/l	0.13	1	EPA 1311
87683	D033 Hexachlorobutadiene	BDL	0.05	mg/l	0.5	1	EPA 1311
67721	D034 Hexachloroethane	BDL	0.05	mg/l	3.0	1	EPA 1311
7439921	D008 Lead	BDL	0.1	mg/l	5.0	1	EPA 1311
58899	D013 Lindane	BDL	0.01	mg/l	0.4	1	EPA 1311
7439976	D009 Mercury	BDL	0.005	mg/l	0.2	1	EPA 1311
72435	D014 Methoxychlor	BDL	0.5	mg/l	10.0	1	EPA 1311
98953	D036 Nitrobenzene	BDL	0.05	mg/l	2.0	1	EPA 1311
87865	D037 Pentachlorophenol	BDL	0.05	mg/l	100.0	1	EPA 1311
7782492	D010 Selenium	BDL	0.5	mg/l	1.0	1	EPA 1311
7440224	D011 Silver	BDL	0.01	mg/l	5.0	1	EPA 1311
8001352	D015 Toxaphene	BDL	0.05	mg/l	0.5	1	EPA 1311
95954	D041 2,4,5-Trichlorophenol	BDL	0.05	mg/l	400.0	1	EPA 1311
88062	D042 2,4,6-Trichlorophenol	BDL	0.05	mg/l	2.0	1	EPA 1311
93721	D017 2,4,5-TP Silvex	BDL	0.1	mg/l	1.0	1	EPA 1311
110861	D038 Pyridine	BDL	0.05	mg/l	5.0	1	EPA 1311
<b>Zero Headspace Extraction (ZHE)</b>							
71432	D018 Benzene	BDL	0.02	mg/l	0.5	1	EPA 1311
56235	D019 Carbon tetrachloride	BDL	0.02	mg/l	0.5	1	EPA 1311
108907	D021 Chlorobenzene	BDL	0.02	mg/l	100.0	1	EPA 1311
363	D022 Chloroform	BDL	0.02	mg/l	6.0	1	EPA 1311
107062	D028 1,2-Dichloroethane	BDL	0.02	mg/l	0.5	1	EPA 1311
75354	D029 1,1-Dichloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
78933	D035 Methyl ethyl ketone	BDL	0.5	mg/l	200.0	1	EPA 1311

BDL - Below Detection Limits

**Sample Description**

Sloss Industries

Sludge, G &amp; M Project #TF0320.015, 970619-LD-23-SM0004, 06/19/97, 16:05, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
127184	D039 Tetrachloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
79016	D040 Trichloroethene	BDL	0.02	mg/l	0.5	1	EPA 1311
75014	D043 Vinyl chloride	BDL	0.02	mg/l	0.2	1	EPA 1311

Respectfully submitted,

  
Project Manager  
Quality Assurance



**ASI****ANALYTICAL SERVICES, INC.**

Environmental Monitoring &amp; Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

**Laboratory Report**

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P. Griffin

Report No.: **84273-17**

July 24, 1997

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970619-LD-23-SM9001, 06/19/97,, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method	
57125	Moisture	82.6	0.04	%	1	EPA 9010A	
	Total Cyanide	16.1	1.2	mg/kg	1		
Priority Pollutant Metals							
Metals							
7440360	Total Antimony	BDL	29	mg/kg	1	EPA 6010A	
7440382	Total Arsenic	6.3	5.7	mg/kg	1	EPA 7060A	
10393	Total Barium	130	5.7	mg/kg	1	EPA 6010A	
7440417	Total Beryllium	BDL	2.9	mg/kg	1	EPA 6010A	
7440439	Total Cadmium	BDL	2.9	mg/kg	1	EPA 6010A	
7440473	Total Chromium	64	5.7	mg/kg	1	EPA 6010A	
7440508	Total Copper	31	11	mg/kg	1	EPA 6010A	
7439921	Total Lead	18	14	mg/kg	1	EPA 6010A	
7439976	Total Mercury	1.9	1.4	mg/kg	1	EPA 7471	
7440020	Total Nickel	68	11	mg/kg	1	EPA 6010A	
7782492	Total Selenium	50	23	mg/kg	1	EPA 7740	
7440224	Total Silver	BDL	5.7	mg/kg	1	EPA 6010A	
7440280	Total Thallium	BDL	23	mg/kg	1	EPA 7841	
7440666	Total Zinc	120	11	mg/kg	1	EPA 6010A	
Volatile Organics (EPA 8260A)							
67641	Acetone	BDL	1500	ug/kg	5	EPA 8260A	
107028	Acrolein	BDL	1500	ug/kg	5	EPA 8260A	
107131	Acrylonitrile	BDL	1500	ug/kg	5	EPA 8260A	
71432	Benzene	BDL	150	ug/kg	5	EPA 8260A	
75274	Bromodichloromethane	BDL	150	ug/kg	5	EPA 8260A	
75252	Bromoform	BDL	150	ug/kg	5	EPA 8260A	
74839	Bromomethane	BDL	300	ug/kg	5	EPA 8260A	
75150	Carbon disulfide	BDL	150	ug/kg	5	EPA 8260A	
56235	Carbon tetrachloride	BDL	150	ug/kg	5	EPA 8260A	
108907	Chlorobenzene	BDL	150	ug/kg	5	EPA 8260A	
103	Chloroethane	BDL	150	ug/kg	5	EPA 8260A	
67663	Chloroform	BDL	150	ug/kg	5	EPA 8260A	
74873	Chloromethane	BDL	300	ug/kg	5	EPA 8260A	
110758	2-Chloroethylvinyl ether	BDL	300	ug/kg	5	EPA 8260A	

BDL - Below Detection Limit

0277

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970619-LD-23-SM9001, 06/19/97,, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	150	ug/kg	5	EPA 8260A
106934	1,2-Dibromoethane	BDL	150	ug/kg	5	EPA 8260A
74953	Dibromomethane	BDL	150	ug/kg	5	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	300	ug/kg	5	EPA 8260A
75718	Dichlorodifluoromethane	BDL	150	ug/kg	5	EPA 8260A
75343	1,1-Dichloroethane	BDL	150	ug/kg	5	EPA 8260A
107062	1,2-Dichloroethane	BDL	150	ug/kg	5	EPA 8260A
75354	1,1-Dichloroethene	BDL	150	ug/kg	5	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	150	ug/kg	5	EPA 8260A
78875	1,2-Dichloropropane	BDL	150	ug/kg	5	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	150	ug/kg	5	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	150	ug/kg	5	EPA 8260A
100414	Ethylbenzene	BDL	150	ug/kg	5	EPA 8260A
97632	Ethyl methacrylate	BDL	150	ug/kg	5	EPA 8260A
591786	2-Hexanone	BDL	1500	ug/kg	5	EPA 8260A
74884	Iodomethane	BDL	150	ug/kg	5	EPA 8260A
78933	2-Butanone	BDL	1500	ug/kg	5	EPA 8260A
75092	Methylene chloride	BDL	150	ug/kg	5	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	1500	ug/kg	5	EPA 8260A
100425	Styrene	BDL	150	ug/kg	5	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	150	ug/kg	5	EPA 8260A
127184	Tetrachloroethene	BDL	150	ug/kg	5	EPA 8260A
108883	Toluene	BDL	150	ug/kg	5	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	150	ug/kg	5	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	150	ug/kg	5	EPA 8260A
79016	Trichloroethene	BDL	150	ug/kg	5	EPA 8260A
75694	Trichlorofluoromethane	BDL	150	ug/kg	5	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	150	ug/kg	5	EPA 8260A
108054	Vinyl acetate	BDL	300	ug/kg	5	EPA 8260A
75014	Vinyl chloride	BDL	300	ug/kg	5	EPA 8260A
1330207	Xylenes	BDL	150	ug/kg	5	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	1900	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	1900	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	1900	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	1900	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	1900	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	10000	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	10000	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	1900	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	1900	ug/kg	1	EPA 8270B
106445	4-Methylphenol	2800	1900	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	1900	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	10000	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	1900	ug/kg	1	EPA 8270B
108952	Phenol	BDL	1900	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970619-LD-23-SM9001, 06/19/97,, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	1900	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	1900	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10000	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	1900	ug/kg	1	EPA 8270B
208968	Acenaphthylene	4200	1900	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	1900	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	15000	1900	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	11000	1900	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	5000	1900	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	8200	1900	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	12000	1900	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	1900	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	1900	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	1900	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	1900	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	1900	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	1900	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	1900	ug/kg	1	EPA 8270B
87	2-Chloronaphthalene	BDL	1900	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	1900	ug/kg	1	EPA 8270B
218019	Chrysene	10000	1900	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	1900	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	1900	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	1900	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	1900	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	1900	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	1900	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	10000	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	1900	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	1900	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	1900	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	1900	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	1900	ug/kg	1	EPA 8270B
206440	Fluoranthene	10000	1900	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	1900	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	1900	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	1900	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	1900	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	1900	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	8200	1900	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	1900	ug/kg	1	EPA 8270B
76	2-Methylnaphthalene	BDL	1900	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	1900	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	1900	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	1900	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

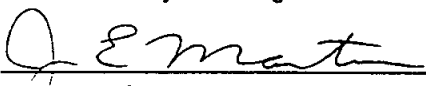
## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970619-LD-23-SM9001, 06/19/97,, received 06/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	1900	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	1900	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	1900	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	1900	ug/kg	1	EPA 8270B
85018	Phenanthrene	3500	1900	ug/kg	1	EPA 8270B
129000	Pyrene	14000	1900	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	1900	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	1900	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P. Griffin

Report No.: 84273-18

October 1, 1997

### Sample Description

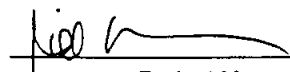
Sloss Industries  
Aqueous,, Batch #30875,,

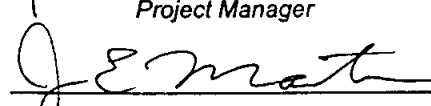
CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
1579	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
5121	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
100027	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
1111	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
1144	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B

**Sample Description**  
Sloss Industries  
Aqueous,, Batch #30875,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270E
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P. Griffin

Report No.: 84273-19

October 1, 1997

### Sample Description

Sloss Industries  
Soil/Sediment,, Batch #30917,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
10079	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
10021	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
100027	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
44	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B

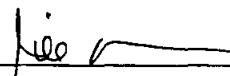
BDL - Below Detection Limit

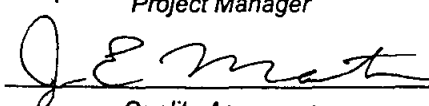
0282

**Sample Description**  
 Sloss Industries  
 Soil/Sediment,, Batch #30917,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
 Project Manager

  
 Quality Assurance





# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P. Griffin

Report No.: 84273-20

October 1, 1997

### Sample Description

Sloss Industries  
TCLP,, Batch #30960/30977/30979/31041,,

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)							
5103719	D020 alpha-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
5564347	D020 gamma-Chlordane	BDL	0.01	mg/l	0.03	1	EPA 1311
	D026 Total Cresol	BDL	0.05	mg/l	200.0	1	EPA 1311
9007	D016 2,4-D	BDL	0.05	mg/l	10.0	1	EPA 1311
10667	D027 1,4-Dichlorobenzene	BDL	0.05	mg/l	7.5	1	EPA 1311
121142	D030 2,4-Dinitrotoluene	BDL	0.05	mg/l	0.13	1	EPA 1311
72208	D012 Endrin	BDL	0.001	mg/l	0.02	1	EPA 1311
76448	D031 Heptachlor	BDL	0.001	mg/l	0.008	1	EPA 1311
1024573	D031 Heptachlor epoxide	BDL	0.001	mg/l	0.008	1	EPA 1311
118741	D032 Hexachlorobenzene	BDL	0.05	mg/l	0.13	1	EPA 1311
87683	D033 Hexachlorobutadiene	BDL	0.05	mg/l	0.5	1	EPA 1311
67721	D034 Hexachloroethane	BDL	0.05	mg/l	3.0	1	EPA 1311
58899	D013 Lindane	BDL	0.01	mg/l	0.4	1	EPA 1311
72435	D014 Methoxychlor	BDL	0.5	mg/l	10.0	1	EPA 1311
98953	D036 Nitrobenzene	BDL	0.05	mg/l	2.0	1	EPA 1311
87865	D037 Pentachlorophenol	BDL	0.05	mg/l	100.0	1	EPA 1311
8001352	D015 Toxaphene	BDL	0.05	mg/l	0.5	1	EPA 1311
95954	D041 2,4,5-Trichlorophenol	BDL	0.05	mg/l	400.0	1	EPA 1311
88062	D042 2,4,6-Trichlorophenol	BDL	0.05	mg/l	2.0	1	EPA 1311
93721	D017 2,4,5-TP Silvex	BDL	0.1	mg/l	1.0	1	EPA 1311
110861	D038 Pyridine	BDL	0.05	mg/l	5.0	1	EPA 1311
Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)							
71432	D018 Benzene	BDL	0.02	mg/l	0.5	1	EPA 1311
56235	D019 Carbon tetrachloride	BDL	0.02	mg/l	0.5	1	EPA 1311
108907	D021 Chlorobenzene	BDL	0.02	mg/l	100.0	1	EPA 1311
6773	D022 Chloroform	BDL	0.02	mg/l	6.0	1	EPA 1311
10662	D028 1,2-Dichloroethane	BDL	0.02	mg/l	0.5	1	EPA 1311
75354	D029 1,1-Dichloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311
78933	D035 Methyl ethyl ketone	BDL	0.5	mg/l	200.0	1	EPA 1311
127184	D039 Tetrachloroethene	BDL	0.02	mg/l	0.7	1	EPA 1311

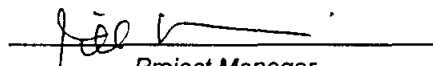
BDL - Below Detection Limit

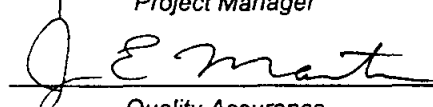
0285

**Sample Description**  
Sloss Industries  
TCLP,, Batch #30960/30977/30979/31041,,

CAS #	Analyte	Result	Detection Limit	Units	Regulatory Limit	Dilution Factor	Analytical Method
79016	D040 Trichloroethene	BDL	0.02	mg/l	0.5	1	EPA 1311
75014	D043 Vinyl chloride	BDL	0.02	mg/l	0.2	1	EPA 1311

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P. Griffin  
Report No.: 84273-21

October 1, 1997

### Sample Description

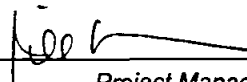
Sloss Industries  
Aqueous,, Batch #30976,,

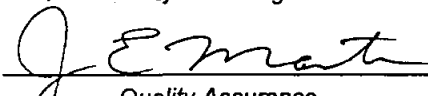
CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
74839	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
74839	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
78875	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
78875	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A

**Sample Description**  
Sloss Industries  
Aqueous,, Batch #30976,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A

Respectfully submitted,

  
\_\_\_\_\_  
Project Manager

  
\_\_\_\_\_  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P. Griffin

Report No.: 84273-22

October 1, 1997

### Sample Description

Sloss Industries  
Soil/Sediment,, Batch #30978,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	50	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/kg	1	EPA 8260A
71432	Benzene	BDL	5	ug/kg	1	EPA 8260A
71474	Bromodichloromethane	BDL	5	ug/kg	1	EPA 8260A
71452	Bromoform	BDL	5	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	5	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/kg	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/kg	1	EPA 826QA
78875	1,2-Dichloropropane	BDL	5	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/kg	1	EPA 8260A
97732	Ethyl methacrylate	BDL	5	ug/kg	1	EPA 8260A
86	2-Hexanone	BDL	50	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/kg	1	EPA 8260A

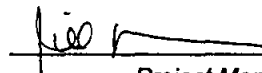
BDL - Below Detection Limit

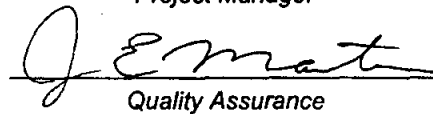
0289

**Sample Description**  
Sloss Industries  
Soil/Sediment,, Batch #30978,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/kg	1	EPA 8260A
100425	Styrene	BDL	5	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/kg	1	EPA 8260A
108883	Toluene	BDL	5	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	5	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	5	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/kg	1	EPA 8260A

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P. Griffin

Report No.: 84273-23

October 1, 1997

### Sample Description

Sloss Industries  
Soil/Sediment,, Batch #31017,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	50	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/kg	1	EPA 8260A
71432	Benzene	BDL	5	ug/kg	1	EPA 8260A
75004	Bromodichloromethane	BDL	5	ug/kg	1	EPA 8260A
75002	Bromoform	BDL	5	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	5	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/kg	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/kg	1	EPA 8260A
97032	Ethyl methacrylate	BDL	5	ug/kg	1	EPA 8260A
100086	2-Hexanone	BDL	50	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/kg	1	EPA 8260A

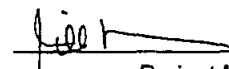
BDL - Below Detection Limit

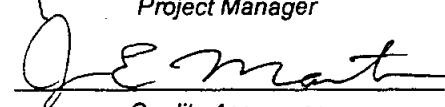
0291

**Sample Description**  
Sloss Industries  
Soil/Sediment,, Batch #31017,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/kg	1	EPA 8260A
100425	Styrene	BDL	5	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/kg	1	EPA 8260A
108883	Toluene	BDL	5	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	5	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	5	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/kg	1	EPA 8260A

Respectfully submitted,

  
\_\_\_\_\_  
Project Manager

  
\_\_\_\_\_  
Quality Assurance





# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P. Griffin

Report No.: 84273-24

October 1, 1997

### Sample Description

Sloss Industries  
Soil/Sediment,, Batch #31082,,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	50	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/kg	1	EPA 8260A
71432	Benzene	BDL	5	ug/kg	1	EPA 8260A
74	Bromodichloromethane	BDL	5	ug/kg	1	EPA 8260A
52	Bromoform	BDL	5	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	5	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/kg	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/kg	1	EPA 8260A
32	Ethyl methacrylate	BDL	5	ug/kg	1	EPA 8260A
786	2-Hexanone	BDL	50	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/kg	1	EPA 8260A

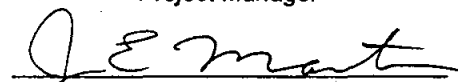
BDL - Below Detection Limit

0293

**Sample Description**  
Sloss Industries  
Soil/Sediment,, Batch #31082,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/kg	1	EPA 8260A
100425	Styrene	BDL	5	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/kg	1	EPA 8260A
108883	Toluene	BDL	5	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	5	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	5	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/kg	1	EPA 8260A

Respectfully submitted,

  
Project Manager  
Quality Assurance

Analytical Services Inc. Batch QC  
For Report Number :84273  
Base Neutrals / Acids

Matrix : Aqueous

Batch # 30875

Method : EPA 8270

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
Phenol	13	13	1	12 - 89	0 - 42
2-Chlorophenol	46	46	0	27 - 123	0 - 40
1,4-Dichlorobenzene	45	45	0	36 - 97	0 - 28
N-Nitrosodipropylamine	55	56	0	41 - 116	0 - 38
1,2,4-Trichlorobenzene	51	50	1	44 - 142	0 - 28
4-Chloro-3-methylphenol	53	52	2	23 - 97	0 - 42
Acenaphthene	58	58	0	46 - 118	0 - 31
2,4-Dinitrotoluene	58	61	5	24 - 96	0 - 38
4-Nitrophenol	19	20	5	10 - 80	0 - 50
Pentachlorophenol	47	47	0	9 - 103	0 - 50
Pyrene	56	57	2	26 - 127	0 - 31

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
Phenol	38	44	15	12 - 89	0 - 42
2-Chlorophenol	56	72	25	27 - 123	0 - 40
1,4-Dichlorobenzene	66	72	9	36 - 97	0 - 28
N-Nitrosodipropylamine	69	77	11	41 - 116	0 - 38
1,2,4-Trichlorobenzene	75	82	9	44 - 142	0 - 28
4-Chloro-3-methylphenol	76	86	12	23 - 97	0 - 42
Acenaphthene	79	87	10	46 - 118	0 - 31
2,4-Dinitrotoluene	81	88	8	24 - 96	0 - 38
4-Nitrophenol	28	46	49	10 - 80	0 - 50
Pentachlorophenol	60	86	36	9 - 103	0 - 50
Pyrene	71	76	7	26 - 127	0 - 31

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Base Neutrals / Acids

Matrix : Aqueous

Batch # 30875

Method : EPA 8270

## % Recovery Objectives

S1	2-Fluorophenol	21 - 100
S2	Phenol-d5	10 - 94
S3	Nitrobenzene-d5	35 - 114
S4	2-Fluorobiphenyl	43 - 116
S5	2,4,6-Tribromophenol	10 - 123
S6	Terphenyl-d14	33 - 141

Sample	File	S1	S2	S3	S4	S5	S6
84221-1	B8844	18	15	88	84	42	70
84221-2	B8845	29	19	82	80	61	68
84221-9	B8846	40	22	89	85	80	68
84221-10	B8847	39	21	87	85	82	75
84221-10MS	B8848	37	36	90	81	65	67
84221-10MSD	B8849	51	40	98	87	83	72
84201-2	B8852	26	18	77	72	43	28
84201-3	B8853	33	21	82	76	75	59
30875BLK	B8861	26	18	65	73	54	52
^^Note: ALSO 84413-11							
30875LCS	B8862	21	11	54	57	61	46
30875LCSD	B8863	21	11	53	57	60	47
84176-1	A5820	23	21	69	115	79	48
84176-2	A5821	22	10	52	101	17	39
84201-1	A5824	32	28	62	103	101	63
84201-2RR	A5845	50	48	72	110	104	87
84221-1RR	A5846	43	38	71	107	90	78
84177-10RR	A5848	5	3	13	27	11	15
^^Note: MATRIX EFFECT							
84177-12RR	A5849	25	28	53	89	57	38
84177-8RR	A5850	22	12	41	114	14	91
84231-18	A5833	49	52	108	89	60	73
84231-19	A5834	21	14	96	146	67	43
^^Note: MATRIX EFFECT							
84273-2	B8907	37	24	49	57	53	55
84273-3	A5876	33	28	46	92	37	76
84285	A5873			60	108		61
^^Note: BN ONLY							
84413-9	B8960	31	21	78	82	81	62
84413-9DUP	B8971	27	18	69	75	82	62

Sample Batch Information  
Base Neutrals / Acids Method : EPA 8270

Sample ID	Preparation			Preparation Notes	Analysis			Inst #
	Date	Time	By		Date	Time	By	
84176-1	06/22/97	1300	MO		06/24/97	1213	tas	5970
84176-2	06/22/97	1300	MO		06/24/97	1246	tas	5970
84201-1	06/22/97	1300	MO		06/24/97	1425	TAS	5970
30875BLK	06/22/97	1300	MO		06/24/97	0953	RFA	5971
30875LCS	06/22/97	1300	MO		06/24/97	1026	RFA	5971
30875LCSD	06/22/97	1300	MO		06/24/97	1059	RFA	5971
84201-2	06/22/97	1400	MO		06/24/97	0118	RFA	5971
84201-3	06/22/97	1400	MO		06/24/97	0152	RFA	5971
84221-1	06/22/97	1400	MO		06/23/97	2050	RFA	5971
84221-10	06/22/97	1400	MO		06/23/97	2231	RFA	5971
84221-2	06/22/97	1400	MO		06/23/97	2124	RFA	5971
84221-9	06/22/97	1400	MO		06/23/97	2158	RFA	5971
84231-18	06/22/97	1400	MO		06/24/97	1920	TAS	5970
84231-19	06/22/97	1400	MO		06/23/97	1953	RFA	5971
84221-10MS	06/22/97	1400	MO		06/23/97	2305	RFA	5971
84221-10MSD	06/22/97	1400	MO		06/23/97	2338	RFA	5971
84177-8	06/24/97	1430	JLC		06/25/97	1753	TAS	5970
84177-10	06/24/97	1430	JLC		06/25/97	1649	TAS	5970
84177-12	06/24/97	1430	JLC		06/25/97	1721	TAS	5970
85	06/24/97	1430	JLC		06/26/97	1240	TAS	5970
84273-2	06/24/97	1430	JLC		06/25/97	1245	DMB	5971
84273-3	06/24/97	1430	JLC		06/26/97	1412	TAS	5970
84201-2RR	06/24/97	1430	JLC		06/25/97	1300	TAS	5970
84221-1RR	06/24/97	1430	JLC		06/25/97	1332	TAS	5970
84177-10RR	06/24/97	1430	JLC		06/25/97	1649	TAS	5970
84177-12RR	06/24/97	1430	JLC		06/25/97	1721	TAS	5970
84177-8RR	06/24/97	1430	JLC		06/25/97	1753	TAS	5970
84413-9	06/27/97	1000	JLC		06/28/97	1623	DMB	5971
84413-9DUP	06/27/97	1000	JLC		06/26/97	2253	TAS	5970

Analytical Services Inc. Batch QC  
 For Report Number :84273  
 Base Neutrals / Acids

Matrix : Soil/Sediment

Batch # 30917

Method : EPA 8270

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
Phenol	42	37	15	26 - 90	0 - 35
2-Chlorophenol	31	26	18	25 - 102	0 - 50
1,4-Dichlorobenzene	28	29	5	28 - 104	0 - 27
N-Nitrosodipropylamine	45	47	4	41 - 126	0 - 38
1,2,4-Trichlorobenzene	42	42	1	38 - 107	0 - 23
4-Chloro-3-methylphenol	40	37	8	26 - 103	0 - 33
Acenaphthene	61	59	3	31 - 137	0 - 19
2,4-Dinitrotoluene	38	37	2	28 - 89	0 - 47
4-Nitrophenol	34	35	5	11 - 114	0 - 50
Pentachlorophenol	43	42	3	17 - 109	0 - 47
Pyrene	57	61	7	35 - 142	0 - 36

^^Note : BATCH PASSES ON LCS/LCSD DATA

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
Phenol	66	69	6	26 - 90	0 - 35
2-Chlorophenol	46	50	10	25 - 102	0 - 50
1,4-Dichlorobenzene	36	37	3	28 - 104	0 - 27
N-Nitrosodipropylamine	69	75	8	41 - 126	0 - 38
1,2,4-Trichlorobenzene	46	48	4	38 - 107	0 - 23
4-Chloro-3-methylphenol	53	62	16	26 - 103	0 - 33
Acenaphthene	83	95	13	31 - 137	0 - 19
2,4-Dinitrotoluene	58	65	11	28 - 89	0 - 47
4-Nitrophenol	52	55	5	11 - 114	0 - 50
Pentachlorophenol	12	14	15	17 - 109	0 - 47
Pyrene	83	42	66	35 - 142	0 - 36

^^Note : BATCH PASSES ON LCS/LCSD DATA

## Analytical Services Inc. Batch QC

Surrogate Recovery

Base Neutrals / Acids

Matrix : Soil/Sediment Batch # 30917

Method : EPA 8270

## % Recovery Objectives

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S1	2-Fluorophenol	25 - 121
S2	Phenol-d5	24 - 113
S3	Nitrobenzene-d5	23 - 120
S4	2-Fluorobiphenyl	30 - 115
S5	2,4,6-Tribromophenol	19 - 122
S6	Terphenyl-d14	18 - 137.

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Sample	File	S1	S2	S3	S4	S5	S6
<hr/>							
30917BLK	A5863	29	32	24	52	47	75
30917LCS	A5861	27	38	40	59	49	53
30917LCSD	A5862	26	32	36	55	48	55
84264-2	A5847	43	8	12	54	46	47
^^Note: POOR CHROMATOGRAPHY MATRIX							
84273-15	A5854	54	80	69	91	162	34
^^Note: MATRIX EFFECT							
84273-16	A5855	49	78	62	52	66	27
84273-11	A5851	48	67	53	48	77	63
84273-12MS	A5852	44	58	58	65	75	50
^^Note: 84273-11MS							
84273-13MSD	A5853	43	61	55	73	88	35
^^Note: 84273-11MSD							
84273-5	B8910	31	35	28	38	35	32
84273-6	B8911	26	24	28	30	30	28
84273-7	B8912	29	33	31	39	34	33
84273-8	B8913	25	27	29	32	43	44
84273-9	B8914	26	29	26	34	28	29
84273-10	B8915	26	32	26	35	28	31
84273-10DUP	B8916	26	31	29	38	32	40
84302-2	B8917	36	40	34	42	39	37
84302-6	B8918	35	41	39	44	52	41
84302-4	B8919	48	53	50	56	64	60
84302-8	B8920	44	51	47	53	64	50
84302-13	B8921	29	32	30	36	30	27
84302-15	B8922	34	38	36	39	38	33
84264-2D	A5860	30	36	90	97	42	71
^^Note: 1:10, 1:1 NO USABLE							
84273-4	A5874	41	60	43	83	33	73
84273-14	A5880	41	62	51	95	73	38

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Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Base Neutrals / Acids  
 Matrix : Soil/Sediment Batch # 30917 Method : EPA 8270

## % Recovery Objectives

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S1	2-Fluorophenol	25 - 121
S2	Phenol-d5	24 - 113
S3	Nitrobenzene-d5	23 - 120
S4	2-Fluorobiphenyl	30 - 115
S5	2,4,6-Tribromophenol	19 - 122
S6	Terphenyl-d14	18 - 137.

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Sample	File	S1	S2	S3	S4	S5	S6
84273-15D	A5883	41	67	57	119	46	116
^^Note: 1:10 MATRIX EFFECT							
84273-17	A5882	38	55	40	71	37	42
84302-4D	A5885	39	48	37	86	37	102
^^Note: 1:10							
84302-11	A5875	5	8	5	16	4	13
^^Note: REEXTRACT							
84302-11RR	B9027	21	17	42	22	26	20
^^Note: MATRIX EFFECT							

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Sample Batch Information  
Base Neutrals / Acids      Method : EPA 8270

Sample ID	Preparation			Preparation Notes	Analysis			Inst #
	Date	Time	By		Date	Time	By	
84273-10DUP	06/24/97	0900	ASF		06/25/97	1745	RFA	5971
84273-11	06/24/97	0900	ASF		06/25/97	1824	TAS	5970
84273-12MS	06/24/97	0900	ASF	84273-11MS	06/25/97	1856	TAS	5970
84273-13MSD	06/24/97	0900	ASF	84273-11MSD	06/25/97	1928	TAS	5970
84273-14	06/24/97	0900	ASF		06/26/97	1616	TAS	5970
84273-15	06/24/97	0900	ASF		06/25/97	1959	TAS	5970
84273-16	06/24/97	0900	ASF		06/25/97	2031	TAS	5970
84273-17	06/24/97	0900	ASF		06/26/97	1717	TAS	5970
84273-4	06/24/97	0900	ASF		06/26/97	1311	TAS	5970
84273-5	06/24/97	0900	ASF		06/25/97	1425	RFA	5971
84273-6	06/23/97	0900	ASF		06/25/97	1458	RFA	5971
30917BLK	06/24/97	0900	ASF		06/25/97	1617	TAS	5970
30917LCS	06/24/97	0900	ASF		06/25/97	1514	TAS	5970
30917LCSD	06/24/97	0900	ASF		06/25/97	1546	TAS	5970
84302-13	06/24/97	0900	ASF		06/25/97	2031	RFA	5971
84302-15	06/24/97	0900	ASF		06/25/97	2105	RFA	5971
84302-2	06/24/97	0900	ASF		06/25/97	1818	RFA	5971
84302-4	06/24/97	0900	ASF		06/25/97	1925	RFA	5971
84302-11	06/24/97	0900	ASF		06/25/97	1342	RFA	5971
02-6	06/24/97	0900	ASF		06/25/97	1851	RFA	5971
84302-8	06/24/97	0900	ASF		06/25/97	1958	RFA	5971
84273-7	06/24/97	0900	ASF		06/25/97	1531	RFA	5971
84273-8	06/24/97	0900	ASF		06/25/97	1605	RFA	5971
84273-9	06/24/97	0900	ASF		06/25/97	1638	RFA	5971
84273-10	06/24/97	0900	ASF		06/25/97	1712	RFA	5971
84264-2	06/25/97	0900	ASF		06/25/97	1404	TAS	5970
84264-2D	06/25/97	1430	TAS		06/25/97	1441	TAS	5970
84273-15D	06/26/97	1200	TAS		06/26/97	1748	TAS	5970
84302-4D	06/26/96	1200	TAS		06/26/97	1849	RFA	5971
84302-11RR	/ /				06/30/97	2314	RFA	5971

Analytical Services Inc. Batch QC  
For Report Number :84273  
Chlorinated Herbicides

Matrix : TCLP

Batch # 30960

Method : EPA 8150

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
2,4-D.	52	55	6	40 - 140	0 - 40
2,4,5-TP (Silvex)	62	70	12	40 - 140	0 - 40
Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
2,4-D	91	87	4	40 - 140	0 - 40
2,4,5-TP (Silvex)	110	107	3	40 - 140	0 - 40

## Analytical Services Inc. Batch QC

## Surrogate Recovery

## Chlorinated Herbicides

Matrix : TCLP

Batch # 30960

Method : EPA 8150

## % Recovery Objectives

		18 - 163					
		DCAA					
		S1					
Sample	File	S1	S2	S3	S4	S5	S6
30960BLK	062597045R	84					
30960LCS	062597046F	66					
30960LCSD	062597047R	96					
84273-12MS	062597059F	98					
^^Note: 84273-11MS							
84273-13MSD	062597060F	93					
^^Note: 84273-11MSD							
84221-5	062597047F						
^^Note: RE-EXTRACT NO SURROGATE							
84221-6	062597048F	106					
84273-4	062597049F	97					
84273-5	062597050F	34					
84273-6	062597051F	94					
84273-7	062597052F	103					
84273-8	062597053F	81					
84273-9	062597054F	97					
84273-10	062597055F	114					
84273-11	062597056F	85					
84273-14	062597061F	88					
84273-15	062597062F	113					
84273-16	062597063F	96					
84273-16DUP	062597064F	103					
84221-5RR	070197B004R	107					

Sample Batch Information  
Chlorinated Herbicides      Method : EPA 8150

Sample ID	Preparation			Preparation Notes	Analysis			Inst #
	Date	Time	By		Date	Time	By	
84221-5	06/26/97	0745	DY		06/27/97	2031	RAC	GC-1
84221-6	06/26/97	0745	DY		06/27/97	2058	RAC	GC-1
84273-10	06/26/97	0745	DY		06/28/97	1211	RAC	GC-1
84273-11	06/26/97	0745	DY		06/28/97	1239	RAC	GC-1
84273-4	06/26/97	0745	DY		06/27/97	2126	RAC	GC-1
84273-5	06/26/97	0745	DY		06/27/97	2154	RAC	GC-1
84273-6	06/26/97	0745	DY		06/27/97	2222	RAC	GC-1
84273-7	06/26/97	0745	DY		06/28/97	1048	RAC	GC-1
84273-8	06/26/97	0745	DY		06/28/97	1116	RAC	GC-1
84273-9	06/26/97	0745	DY		06/28/97	1143	RAC	GC-1
30960BLK	06/25/97	0930	DY		06/26/97	0351	RAC	GC-1
30960LCS	06/25/97	0930	DY		06/26/97	0446	RAC	GC-1
30960LCSD	06/25/97	0930	DY		06/26/97	0446	RAC	GC-1
84273-12MS	06/26/97	1400	DY	84273-11MS	06/28/97	1403	RAC	GC-1
84273-13MSD	06/26/97	1400	DY	84273-11MSD	06/28/97	1430	RAC	GC-1
84273-14	06/26/97	1400	DY		06/28/97	1458	RAC	GC-1
84273-15	06/26/97	1400	DY		06/28/97	1526	RAC	GC-1
84273-16	06/26/97	1400	DY		06/28/97	1554	RAC	GC-1
84273-16DUP	06/26/97	1400	DY		06/28/97	1622	RAC	GC-1
84221-5RR	07/01/97	0930	DY		07/01/97	1544	RAC	GC-1

Analytical Services Inc. Batch QC  
 For Report Number :84273  
 Volatile Organics

Matrix : Aqueous

Batch # 30976

Method : EPA 8240/8260

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	96	102	6	61 - 145	0 - 14
Trichloroethene	100	106	5	71 - 120	0 - 14
Benzene	106	106	0	76 - 127	0 - 11
Toluene	101	111	9	76 - 125	0 - 13
Chlorobenzene	103	105	2	75 - 130	0 - 13

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	96	100	4	61 - 145	0 - 14
Trichloroethene	103	101	2	71 - 120	0 - 14
Benzene	105	107	2	76 - 127	0 - 11
Toluene	105	109	4	76 - 125	0 - 13
Chlorobenzene	102	106	3	75 - 130	0 - 13

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Aqueous

Batch # 30976

Method : EPA 8240/8260

## % Recovery Objectives

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S1	1,2-Dichloroethane-d4	76 - 114
S2	Toluene-d8	88 - 110
S3	Ethylbenzene-d10	75 - 115
S4	4-Bromofluorobenzene	86 - 115

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Sample	File	S1	S2	S3	S4	S5	S6
30976BLK1A	>LR403	85	98	107	100		
84231-6	>LR411	115	91	96	104		
^^Note: RE FOR SURR/MATRIX EFFECT							
84231-7	>LR412	111	94	98	106		
84231-8	>LR413	113	95	100	103		
84231-9	>LR414	106	95	99	101		
30976BLK2A	>RQ687	85	108	101	91		
84221-1	>RQ688	89	108	102	92		
84221-2	>RQ689	88	107	101	89		
84221-8	>RQ690	89	106	101	90		
84221-9	>RQ691	88	108	100	91		
84221-10	>RQ692	91	106	101	89		
84273-1	>RQ693	85	109	102	87		
84273-2	>RQ694	89	105	95	86		
84273-3	>RQ695	89	110	103	91		
84147-1	>LR398	102	93	99	103		
30976BLK1B	>LR435	103	94	102	104		
84231-10	>LR437	79	100	108	100		
84231-11	>LR438	88	95	104	101		
84231-12	>LR439	85	95	104	98		
84231-13	>LR440	82	99	106	96		
84231-14	>LR441	95	94	99	99		
84231-15	>LR442	82	95	104	97		
84231-16	>LR443	99	93	99	102		
30976LCS	>LR449	101	93	100	102		
30976LCSD	>LR450	79	100	108	96		
84231-10MS	>LR451	86	95	102	96		
84231-10MSD	>LR452	84	97	103	96		

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Sample Batch Information  
Volatile Organics Method : EPA 8240/8260

Sample ID	Preparation		Preparation Notes	Analysis			Inst #
	Date	Time By		Date	Time	By	
30976BLK1A	/	/		06/24/97	2308	JKP	VOA1
84231-6	/	/		06/25/97	0955	JKP	VOA1
84231-7	/	/		06/25/97	1029	JKP	VOA1
84231-8	/	/		06/25/97	1104	JKP	VOA1
84231-9	/	/		06/25/97	1214	JKP	VOA1
30976BLK2A	/	/		06/24/97	2348	JKP	VOA2
84221-1	/	/		06/25/97	0021	JKP	VOA2
84221-2	/	/		06/25/97	0055	JKP	VOA2
84221-8	/	/		06/25/97	0129	JKP	VOA2
84221-9	/	/		06/25/97	0202	JKP	VOA2
84221-10	/	/		06/25/97	0236	JKP	VOA2
84273-1	/	/		06/25/97	0309	JKP	VOA2
84273-2	/	/		06/25/97	0343	JKP	VOA2
84273-3	/	/		06/25/97	0417	JKP	VOA2
84147-1	/	/		06/24/97	1811	JKP	VOA1
30976BLK1B	/	/		06/25/97	2143	JKP	VOA1
84231-10	/	/		06/25/97	1147	JKP	VOA1
84231-11	/	/		06/26/97	1222	JKP	VOA1
84231-12	/	/		06/26/97	1256	JKP	VOA1
84231-13	/	/		06/26/97	1330	JKP	VOA1
84231-14	/	/		06/26/97	1404	JKP	VOA1
84231-15	/	/		06/26/97	1438	JKP	VOA1
84231-16	/	/		06/26/97	1513	JKP	VOA1
30976LCS	/	/		06/26/97	1910	JKP	VOA1
30976LCSD	/	/		06/26/97	1944	JKP	VOA1
84231-10MS	/	/		06/26/97	2018	JKP	VOA1
84231-10MSD	/	/		06/26/97	2052	JKP	VOA1

Analytical Services Inc. Batch QC  
 For Report Number :84273  
 Organochlorine Pesticides

Matrix : TCLP

Batch # 30977

Method : EPA 8080

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
BHC-gamma (Lindane)	83	87	5	32 - 127	0 - 40
Heptachlor	84	92	8	34 - 111	0 - 40
Toxaphene	28	26	7	25 - 160	0 - 40
Heptachlor epoxide	87	90	4	25 - 160	0 - 40
Endrin	92	88	4	30 - 147	0 - 40
Chlordane	99	106	6	25 - 160	0 - 40
Methoxychlor	87	84	3	25 - 160	0 - 40
Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
BHC-gamma (Lindane)	94	95	1	32 - 127	0 - 40
Heptachlor	101	103	2	34 - 111	0 - 40
Toxaphene	29	33	13	25 - 160	0 - 40
Heptachlor epoxide	99	105	5	25 - 160	0 - 40
Endrin	115	119	3	30 - 147	0 - 40
Chlordane	95	134	34	25 - 160	0 - 40
Methoxychlor	74	93	22	25 - 160	0 - 40



Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Organochlorine Pesticides

Matrix : TCLP

Batch # 30977

Method : EPA 8080

## % Recovery Objectives

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S1	Dibutylchloredate	34 - 151
S2	Tetrachloro-m-xylene	40 - 111
S3	Decachlorobiphenyl	24 - 153

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Sample	File	S1	S2	S3	S4	S5	S6
<hr/>							
30977BLK	062797B023F	94	74	90			
30977LCS	062797B024F	99	66	108			
30977LCSD	062797B025R	99	68	115			
84273-12MS	062797B050F	107	80	101			
^^Note: 84273-11MS							
84273-13MSD	062797B051F	114	81	102			
^^Note: 84273-11MSD							
84273-4	062797B032F	86	69	40			
84273-5	062797B035F	96	71	89			
84273-6	062797B036F	106	72	101			
84273-7	062797B037F	98	70	89			
84273-8	062797B038F	91	61	83			
84273-9	062797B041F	95	70	92			
84273-10DUP	062797B042F	82	51	73			
^^Note: 84273-11DUP							
84273-11	062797B043F	182	163	200			
84273-14	062797B044F	88	76	77			
84273-15	062797B047F	87	78	81			
84273-16	062797B048F	82	71	86			
84221-5	062797B039F	90	64	90			
84221-6	062797B040F	97	71	98			
30977BLKPCB	070197015F		67	87			
^^Note: PCB ONLY							
84273-11RR	070197017RF	91	90	113			

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Sample Batch Information  
Organochlorine Pesticides      Method : EPA 8080

Sample ID	Preparation			Preparation Notes	Analysis			Inst #
	Date	Time	By		Date	Time	By	
30977BLK	06/26/97	0730	MO/TB		06/27/97	2348	RAC	GC-3
30977LCS	06/26/97	0730	MO/TB		06/28/97	0016	RAC	GC-3
30977LCSD	06/26/97	0730	MO/TB		06/28/97	0016	RAC	GC-3
84273-12MS	06/26/97	0730	MO/TB	84273-11MS	06/28/97	1237	RAC	GC-3
84273-13MSD	06/26/97	0730	MO/TB	84273-11MSD	06/28/97	1306	RAC	GC-3
84273-4	06/26/97	0730	MO/TB		06/28/97	0404	RAC	GC-3
84273-5	06/26/97	0730	MO/TB		06/28/97	0530	RAC	GC-3
84273-6	06/26/97	0730	MO/TB		06/28/97	0558	RAC	GC-3
84273-7	06/26/97	0730	MO/TB		06/28/97	0627	RAC	GC-3
84273-8	06/26/97	0730	MO/TB		06/28/97	0655	RAC	GC-3
84273-9	06/26/97	0730	MO/TB		06/28/97	0821	RAC	GC-3
84273-10DUP	06/26/97	0730	MO/TB	84273-11DUP	06/28/97	0849	RAC	GC-3
84273-11	06/26/97	0730	MO/TB		06/28/97	0918	RAC	GC-3
84273-14	06/26/97	0730	MO/TB		06/28/97	0946	RAC	GC-3
84273-15	06/26/97	0730	MO/TB		06/28/97	1112	RAC	GC-3
84273-16	06/26/97	0730	MO/TB		06/28/97	1140	RAC	GC-3
84221-5	06/26/97	0730	MO/TB		06/28/97	0723	RAC	GC-3
30977BLKPCB	07/01/97	1030	TB		07/01/97	1354	RAC	GC-3
84273-11RR	07/01/97	1030	TB		07/02/97	0205	RAC	GC-3
84221-6	06/26/97	0730	MO/TB		06/28/97	0752	RAC	GC-3

Analytical Services Inc. Batch QC  
For Report Number :84273  
Volatile Organics

Matrix : Soil/Sediment

Batch # 30978

Method : EPA 8240/8260

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	70	67	4	61 - 145	0 - 14
Trichloroethene	80	80	1	71 - 120	0 - 14
Benzene	96	101	5	76 - 127	0 - 11
Toluene	98	98	1	76 - 125	0 - 13
Chlorobenzene	96	96	0	75 - 130	0 - 13

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	74	80	7	61 - 145	0 - 14
Trichloroethene	73	76	4	71 - 120	0 - 14
Benzene	107	112	5	76 - 127	0 - 11
Toluene	109	111	2	76 - 125	0 - 13
Chlorobenzene	99	102	3	75 - 130	0 - 13

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Soil/Sediment Batch # 30978

Method : EPA 8240/8260

% Recovery Objectives

S1	1,2-Dichloroethane-d4	70 - 121
S2	Toluene-d8	81 - 117
S3	Ethylbenzene-d10	79 - 115
S4	4-Bromofluorobenzene	74 - 121

Sample	File	S1	S2	S3	S4	S5	S6
30978BLK2A	>RQ698	84	100	96	80		
30978LCS	>RQ699	83	101	97	79		
30978LCSD	>RQ700	84	102	98	79		
84221-3	>RQ701	92	132	113	64		
^^Note: MATRIX EFFECT							
84221-5	>RQ702	86	120	105	65		
^^Note: MATRIX EFFECT							
84221-6	>RQ703	16	141	195	85		
84221-12	>RQ705	95	111	101	65		
^^Note: RE FOR SURR							
84221-13	>RQ706	94	112	96	74		
84221-14	>RQ707	91	115	102	69		
84221-15	>RQ708	93	119	105	70		
84221-16	>RQ709	90	106	99	75		
84221-16MS	>RQ710	90	105	99	77		
^^Note: 84221-17							
84221-16MSD	>RQ746	88	105	99	77		
^^Note: 84221-18							
30978BLK2B	>RQ719	93	104	98	90		
84221-19	>RQ721	53	948	121	73		
84221-20	>RQ722	89	106	101	86		
84221-21	>RQ723	86	111	99	84		
84221-22	>RQ724	94	111	103	77		
84221-23	>RQ725	80	115	102	69		
84221-24	>RQ726	83	112	101	83		
84221-25	>RQ727	87	103	102	81		
84221-26	>RQ728	86	116	103	78		
84221-27	>RQ729	94	123	106	71		
84221-28	>RQ730	90	110	97	79		
84273-4	>RQ733	99	118	113	67		
84273-5	>RQ734	86	122	107	66		
^^Note: MATRIX EFFECT							

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Soil/Sediment Batch # 30978

Method : EPA 8240/8260

% Recovery Objectives

---

S1	1,2-Dichloroethane-d4	70 - 121
S2	Toluene-d8	81 - 117
S3	Ethylbenzene-d10	79 - 115
S4	4-Bromofluorobenzene	74 - 121

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Sample	File	S1	S2	S3	S4	S5	S6
84221-3DUP	>RQ792	94	129	114	69		
^^Note: MATRIX EFFECT							
84221-5DUP	>RQ792	83	120	105	73		
^^Note: MATRIX EFFECT							
30978BLK2C	>RQ781	80	100	96	91		

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Sample Batch Information  
Volatile Organics Method : EPA 8240/8260

Sample ID	Preparation		Preparation Notes	Analysis			Inst #
	Date	Time By		Date	Time By		
30978BLK2A	/	/		06/25/97	0640	JKP	VOA2
30978LCS	/	/		06/25/97	0713	JKP	VOA2
30978LCSD	/	/		06/25/97	0747	JKP	VOA2
84221-3	/	/		06/25/97	0820	JKP	VOA2
84221-5	/	/		06/25/97	0854	JKP	VOA2
84221-6	/	/		06/25/97	0935	JKP	VOA2
84221-12	/	/		06/25/97	1042	JKP	VOA2
84221-13	/	/		06/25/97	1116	JKP	VOA2
84221-14	/	/		06/25/97	1150	JKP	VOA2
84221-15	/	/		06/25/97	1223	JKP	VOA2
84221-16	/	/		06/25/97	1257	JKP	VOA2
84221-16MS	/	/		06/25/97	1330	JKP	VOA2
84221-16MSD	/	/		06/27/97	0240	JKP	VOA2
30978BLK2B	/	/		06/26/97	1017	JKP	VOA2
84221-19	/	/		06/25/97	1221	JKP	VOA2
84221-20	/	/		06/25/97	1255	JKP	VOA2
84221-21	/	/		06/25/97	1328	JKP	VOA2
84221-22	/	/		06/25/97	1402	JKP	VOA2
84221-23	/	/		06/25/97	1435	JKP	VOA2
84221-24	/	/		06/25/97	1509	JKP	VOA2
84221-25	/	/		06/26/97	1543	JKP	VOA2
84221-26	/	/		06/26/97	1616	JKP	VOA2
84221-27	/	/		06/26/97	1650	JKP	VOA2
84221-28	/	/		06/26/97	1723	JKP	VOA2
84273-4	/	/		06/26/97	1925	JKP	VOA2
84273-5	/	/		06/26/97	1958	JKP	VOA2
84221-3DUP	/	/		06/28/97	2205	JKP	VOA2
84221-5DUP	/	/		06/28/97	2240	JKP	VOA2
30978BLK2C	/	/		06/28/97	1608	JKP	VOA2

Analytical Services Inc. Batch QC  
 For Report Number :84273  
 Base Neutrals / Acids

Matrix : TCLP

Batch # 30979

Method : EPA 8270

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
o-Cresol	49	57	14	10 - 150	0 - 50
m-Cresol + p-Cresol	47	54	13	10 - 150	0 - 50
1,4-Dichlorobenzene	37	43	16	36 - 97	0 - 28
2,4-Dinitrotoluene	46	52	13	24 - 96	0 - 38
Hexachlorobenzene	66	79	18	10 - 152	0 - 40
Hexachlorobutadiene	33	41	20	24 - 116	0 - 40
Hexachloroethane	47	45	5	40 - 113	0 - 40
Nitrobenzene	52	60	14	35 - 180	0 - 40
Pentachlorophenol	52	65	23	9 - 103	0 - 50
Pyridine	22	30	33	10 - 110	0 - 90
2,4,5-Trichlorophenol	62	71	13	10 - 150	0 - 50
2,4,6-Trichlorophenol	55	64	15	37 - 144	0 - 40

^^Note : BATCH PASSES ON LCS/LCSD DATA

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
o-Cresol	0	0	NC	10 - 150	0 - 50
m-Cresol + p-Cresol	0	0	NC	10 - 150	0 - 50
1,4-Dichlorobenzene	58	56	3	36 - 97	0 - 28
2,4-Dinitrotoluene	91	85	6	24 - 96	0 - 38
Hexachlorobenzene	84	92	9	10 - 152	0 - 40
Hexachlorobutadiene	55	62	12	24 - 116	0 - 40
Hexachloroethane	54	53	3	40 - 113	0 - 40
Nitrobenzene	77	80	4	35 - 180	0 - 40
Pentachlorophenol	13	20	44	9 - 103	0 - 50
Pyridine	31	21	35	10 - 110	0 - 90
2,4,5-Trichlorophenol	9	14	39	10 - 150	0 - 50
2,4,6-Trichlorophenol	0	0	NC	37 - 144	0 - 40

^^Note : BATCH PASSES ON LCS/LCSD DATA

NC = Not Calculated

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Base Neutrals / Acids  
 Batch # 30979

Matrix : TCLP Method : EPA 8270

% Recovery Objectives

S1	2-Fluorophenol	21 - 100
S2	Phenol-d5	10 - 94
S3	Nitrobenzene-d5	35 - 114
S4	2-Fluorobiphenyl	43 - 116
S5	2,4,6-Tribromophenol	10 - 123
S6	Terphenyl-d14	33 - 141.

Sample	File	S1	S2	S3	S4	S5	S6
30979BLK	B8932	48	30	79	79	80	81
30979LCS	B8935	33	22	52	58	61	54
30979LCSD	B8935	37	24	59	64	71	63
84221-5	B8967	2	1	77	81	3	47
84221-6	B8968			70	75	2	46
84273-4	B8961	8	1	73	73	4	31
84273-5	B8962	17	7	60	61	42	45
84273-6	B8963	1		83	83	6	33
84273-7	B8964	1		77	84	5	43
84273-8	B8965	8	4	63	73	25	36
84273-9	B8966	5	2	65	70	32	31
84273-10	B8940			74	80	2	47
84273-11	B8941	1		42	52	3	55
84273-12MS	B8969	1		77	79	5	60
^^Note: 84273-11MS							
84273-13MSD	B8970	2	1	81	80	17	78
^^Note: 84273-11MSD							
84273-14	B8942	29	21	60	69	71	67
84273-15	B8943	36	22	67	75	73	67
84273-16	B8944	23	19	59	72	58	68
84221-5RR	B8990			59	64	2	38
84221-6RR	B8991	2	1	53	57	4	32
84273-4RR	B8992			65	71	2	39
84273-5RR	B8993	10	5	54	61	35	49
84273-6RR	B8994			34	36	1	23
84273-7RR	B8995	1		63	70	5	53
84273-8RR	B8996	1		11	12	5	7
84273-9RR	B8997	1		53	59	3	37
84273-10RR	B8998	1		46	48	3	31
84273-11RR	B9019	1		47	51	5	42
84273-12MSRR	B8999	1		53	58	4	44
^^Note: 84273-11MS							



## Analytical Services Inc. Batch QC

Surrogate Recovery

Base Neutrals / Acids

Matrix : TCLP

Batch # 30979

Method : EPA 8270

## % Recovery Objectives

S1	2-Fluorophenol	21 - 100
S2	Phenol-d5	10 - 94
S3	Nitrobenzene-d5	35 - 114
S4	2-Fluorobiphenyl	43 - 116
S5	2,4,6-Tribromophenol	10 - 123
S6	Terphenyl-d14	33 - 141

Sample	File	S1	S2	S3	S4	S5	S6
84273-13MSDRR	B9000	5	4	62	67	14	51
^^Note: 84273-11MSD							

Sample Batch Information  
Base Neutrals / Acids      Method : EPA 8270

Sample ID	Preparation			Preparation Notes	Analysis			Inst #
	Date	Time	By		Date	Time	By	
30979BLK	06/26/97	1030	JLC		06/27/97	1322	RFA	5971
30979LCS	06/26/97	1030	JLC		06/27/97	1509	RFA	5971
30979LCSD	06/26/97	1030	JLC		06/27/97	1545	RFA	5971
84221-5	06/26/97	1030	JLC		06/28/97	2032	RFA	5971
84221-6	06/26/97	1030	JLC		06/28/97	2107	RFA	5971
84273-10	06/26/97	1030	JLC		06/27/97	1606	RFA	5971
84273-11	06/26/97	1030	JLC		06/27/97	1842	RFA	5971
84273-14	06/26/97	1030	JLC		06/27/97	1918	RFA	5971
84273-15	06/26/97	1030	JLC		06/27/97	1954	RFA	5971
84273-16	06/26/97	1030	JLC		06/27/97	2029	RFA	5971
84273-4	06/27/97	1000	JLC		06/28/97	1658	RFA	5971
84273-5	06/27/97	1000	JLC		06/28/97	1734	RFA	5971
84273-6	06/27/97	1000	JLC		06/28/97	1810	RFA	5971
84273-7	06/27/97	1000	JLC		06/28/97	1845	RFA	5971
84273-8	06/27/97	1000	JLC		06/28/97	1921	RFA	5971
84273-9	06/27/97	1000	JLC		06/28/97	1956	RFA	5971
84273-10RR	06/29/97	1600	LNI		06/30/97	0425	DMB	5971
84221-5RR	06/29/97	1600	LNI		06/29/97	1143	RFA	5971
84221-6RR	06/29/97	1600	LNI		06/30/97	1218	DMB	5971
84273-11RR	06/29/97	1600	LNI		06/30/97	1829	DMB	597
84273-4RR	06/29/97	1600	LNI		06/30/97	1254	DMB	597
84273-5RR	06/29/97	1600	LNI		06/30/97	1329	DMB	5971
84273-6RR	06/29/97	1600	LNI		06/30/97	0204	DMB	5971
84273-7RR	06/29/97	1600	LNI		06/30/97	0239	DMB	5971
84273-8RR	06/29/97	1600	LNI		06/30/97	0314	DMB	5971
84273-9RR	06/29/97	1600	LNI		06/30/97	0350	DMB	5971
84273-12MSRR	06/29/97	1600	LNI	84273-11MS	06/30/97	0500	DMB	5971
84273-13MSDRR	06/29/97	1600	LNI	84273-11MSD	06/30/97	0535	DMB	5971
84273-12MS	06/27/97	1000	JLC	84273-11MS	06/28/97	2143	RFA	5971
84273-13MSD	06/27/97	1000	JLC	84273-11MSD	06/28/97	1018	RFA	5971

Analytical Services Inc. Batch QC  
 For Report Number :84273  
 Volatile Organics

Matrix : Soil/Sediment

Batch # 31017

Method : EPA 8240/8260

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	97	99	2	61 - 145	0 - 14
Trichloroethene	98	100	1	71 - 120	0 - 14
Benzene	126	127	0	76 - 127	0 - 11
Toluene	118	118	0	76 - 125	0 - 13
Chlorobenzene	113	113	0	75 - 130	0 - 13
^^Note : BATCH PASSES ON LCS/LCSD DATA					

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	95	116	19	61 - 145	0 - 14
Trichloroethene	92	90	2	71 - 120	0 - 14
Benzene	122	130	6	76 - 127	0 - 11
Toluene	127	152	18	76 - 125	0 - 13
Chlorobenzene	110	114	3	75 - 130	0 - 13
^^Note : BATCH PASSES ON LCS/LCSD DATA					

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Soil/Sediment Batch # 31017

Method : EPA 8240/8260

## % Recovery Objectives

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S1	1,2-Dichloroethane-d4	70 - 121
S2	Toluene-d8	81 - 117
S3	Ethylbenzene-d10	79 - 115
S4	4-Bromofluorobenzene	74 - 121

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Sample	File	S1	S2	S3	S4	S5	S6
<hr/>							
31017BLK2A	>RQ719	93	104	98	90		
84273-7	>RQ736	73	123	107	66		
84273-8	>RQ737	79	114	104	76		
84273-9	>RQ738	81	106	100	76		
84273-10	>RQ739	77	123	106	65		
31017BLK2B	>RQ781	80	100	96	91		
84221-6RA	>RQ794	91	129	114	72		
^^Note: RA FOR SURR/MATRIX EFFECT							
84221-11RA	>RQ795	97	104	97	78		
^^Note: RA DUE TO NO USABLE DATA							
84221-12RA	>RQ796	85	101	102	78		
^^Note: RA FOR SURR							
84221-14RA	>RQ797	91	113	104	80		
^^Note: RA FOR SURR							
84221-15RA	>RQ798	92	107	101	83		
^^Note: RA FOR SURR							
84221-19RA	>RQ799	86	112	97	79		
^^Note: RA FOR SURR							
84221-23RA	>RQ800	88	107	102	86		
^^Note: RA FOR SURR							
84273-5RA	>RQ801	85	131	112	72		
^^Note: RA FOR SURR/MATRIX EFFECT							
84221-27RA	>RQ802	87	117	102	77		
^^Note: RA FOR SURR							
84273-6RA	>RQ803	85	129	107	72		
^^Note: RA DUE TO NO USABLE DATA/MATRX							
31017LCS	>RQ825	84	96	95	91		

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Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Soil/Sediment Batch # 31017

Method : EPA 8240/8260

## % Recovery Objectives

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S1	1,2-Dichloroethane-d4	70 - 121
S2	Toluene-d8	81 - 117
S3	Ethylbenzene-d10	79 - 115
S4	4-Bromofluorobenzene	74 - 121

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Sample	File	S1	S2	S3	S4	S5	S6
<hr/>							
31017LCSD	>RQ826	83	95	94	88		
31017BLK2C	>RQ806	76	100	99	90		
84273-17	>LR536	113	100	98	98		
84273-11	>RQ824	73	105	98	83		
84273-11MS	>RQ808	74	106	95	80		
^^Note: 84273-12							
84273-14	>RQ810	74	107	94	79		
84273-15	>RQ811	73	117	98	69		
84273-4RA	>RQ812	97	114	112	71		
^^Note: RA FOR SURR/MATRIX EFFECT							
84273-11MSD	>RQ809	88	116	92	76		
^^Note: 84273-13							
84273-7DUP	>RQ813	80	122	108	74		
^^Note: MATRIX EFFECT							
84273-10DUP	>RQ814	79	115	103	73		
^^Note: MATRIX EFFECT							
31017BLK1A	>LR521	102	93	102	104		
31017BLK1B	>LR542	93	100	105	103		
84273-15DUP	>LR567	120	115	101	88		

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Sample Batch Information  
Volatile Organics      Method : EPA 8240/8260

Sample ID	Preparation		Preparation Notes	Analysis			Inst #
	Date	Time By		Date	Time By		
31017BLK2A	/	/		06/25/97	1017 JKP	VOA2	
84273-7	/	/		06/26/97	2105 JKP	VOA2	
84273-8	/	/		06/26/97	2139 JKP	VOA2	
84273-9	/	/		06/26/97	2212 JKP	VOA2	
84273-10	/	/		06/26/97	2246 JKP	VOA2	
31017BLK2B	/	/		06/28/97	1608 JKP	VOA2	
84221-6RA	/	/		06/28/97	2314 JKP	VOA2	
84221-11RA	/	/		06/28/97	2349 JKP	VOA2	
84221-12RA	/	/		06/29/97	0023 JKP	VOA2	
84221-14RA	/	/		06/29/97	0057 JKP	VOA2	
84221-15RA	/	/		06/29/97	0132 JKP	VOA2	
84221-19RA	/	/		06/29/97	0207 JKP	VOA2	
84221-23RA	/	/		06/29/97	0241 JKP	VOA2	
84273-5RA	/	/		06/29/97	0316 JKP	VOA2	
84221-27RA	/	/		06/29/97	0351 JKP	VOA2	
84273-6RA	/	/		06/29/97	0425 JKP	VOA2	
31017LCS	/	/		06/30/97	0852 JKP	VOA2	
31017LCSD	/	/		06/30/97	0926 JKP	VOA2	
31017BLK2C	/	/		06/29/97	2011 JKP	VOA2	
84273-11MS	/	/		06/29/97	2325 JKP	VOA2	
84273-4RA	/	/		06/30/97	0201 JKP	VOA2	
84273-11MSD	/	/		06/30/97	0127 JKP	VOA2	
84273-7DUP	/	/		06/30/97	0235 JKP	VOA2	
84273-10DUP	/	/		06/30/97	0310 JKP	VOA2	
84273-17	/	/		06/30/97	0615 JKP	VOA1	
84273-11	/	/		06/29/97	2248 JKP	VOA2	
84273-14	/	/		06/30/97	0006 JKP	VOA2	
84273-15	/	/		06/30/97	0042 JKP	VOA2	
31017BLK1A	/	/		06/29/97	2033 JKP	VOA1	
31017BLK1B	/	/		06/30/97	0955 JKP	VOA1	
84273-15DUP	/	/		06/30/97	2316 JKP	VOA1	

Analytical Services Inc. Batch QC  
 For Report Number :84273  
 Volatile Organics

Matrix : TCLP

Batch # 31041

Method : EPA 8240/8260

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
Benzene	96	97	1	90 - 115	0 - 13
Carbon tetrachloride	111	109	1	55 - 115	0 - 15
Chlorobenzene	104	105	1	87 - 109	0 - 10
Chloroform	94	97	3	55 - 115	0 - 15
1,2-Dichloroethane	86	92	7	90 - 115	0 - 13
1,1-Dichloroethene	104	102	2	55 - 111	0 - 15
MEK (2-Butanone)	99	89	11	55 - 115	0 - 15
Tetrachloroethene	112	114	1	55 - 115	0 - 15
Trichloroethene	105	105	0	78 - 110	0 - 11
Vinyl chloride	97	95	2	55 - 115	0 - 15

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
Benzene	106	108	2	90 - 115	0 - 13
Carbon tetrachloride	95	108	12	55 - 115	0 - 15
Chlorobenzene	107	106	0	87 - 109	0 - 10
Chloroform	130	127	2	55 - 115	0 - 15
1,2-Dichloroethane	129	130	1	90 - 115	0 - 13
1,1-Dichloroethene	102	111	8	55 - 111	0 - 15
MEK (2-Butanone)	157	154	1	55 - 115	0 - 15
Tetrachloroethene	90	98	8	55 - 115	0 - 15
Trichloroethene	106	110	3	78 - 110	0 - 11
Vinyl chloride	80	91	13	55 - 115	0 - 15

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics  
 Batch # 31041

Matrix : TCLP

Method : EPA 8240/8260

## % Recovery Objectives

S1	1,2-Dichloroethane-d4	76 - 114
S2	Toluene-d8	88 - 110
S3	Ethylbenzene-d10	75 - 115
S4	4-Bromofluorobenzene	86 - 115

Sample	File	S1	S2	S3	S4	S5	S6
31041BLK1A	>LR496	92	98	105	105		
31041LCS	>LR558	85	104	114	105		
31041LCSD	>LR559	93	104	113	111		
84273-4	>LR507	94	98	102	104		
84273-5	>LR508	94	98	104	104		
84273-6	>LR509	91	99	103	106		
84273-7	>LR510	100	96	102	107		
84273-8	>LR511	87	97	105	103		
84273-9	>LR512	110	94	100	108		
84273-11	>LR513	112	93	98	112		
84273-11MS	>LR515	117	94	101	109		
^^Note: 84273-12							
84273-11MSD	>LR516	118	95	100	109		
^^Note: 84273-13							
84273-14	>LR517	118	98	104	110		
84273-15	>LR518	130	91	95	114		
^^Note: RE FOR SURR/MATRIX EFFECT							
31041BLK1B	>LR521	102	93	102	104		
84221-5	>LR529	85	97	106	101		
84221-6	>LR530	105	94	100	104		
84273-10	>LR531	102	94	102	105		
84273-16	>LR532	98	94	101	105		
31041BLK	>LR533	106	94	101	107		
84273-14RA	>LR534	111	93	101	109		
^^Note: RA FOR SURR							
84273-15RA	>LR535	117	90	97	108		
^^Note: RA FOR SURR/MATRIX EFFECT							
31041BLK1C	>LR616	86	92	89	96		
84424-1	>LR618	92	93	87	97		
31041BLK2A	>RM097	109	98	102	92		
84537-5	>RM097	102	98	102	94		
31041BLK1D	>LR943	102	102	94	99		



Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : TCLP

Batch # 31041

Method : EPA 8240/8260

## % Recovery Objectives

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S1	1,2-Dichloroethane-d4	76 - 114
S2	Toluene-d8	88 - 110
S3	Ethylbenzene-d10	75 - 115
S4	4-Bromofluorobenzene	86 - 115

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Sample	File	S1	S2	S3	S4	S5	S6
84684	>LR968	91	106	95	94		
84710	>LR969	80	108	98	91		
84710DUP	>LB086	80	109	103	103		
84899	>RM419	97	101	95	88		

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Sample Batch Information  
Volatile Organics Method : EPA 8240/8260

Sample ID	Preparation			Preparation Notes	Analysis			Inst #
	Date	Time	By		Date	Time	By	
31041BLK1A	/	/			06/28/97	1531	JKP	VOA1
31041LCS	/	/			06/30/97	1511	JKP	VOA1
31041LCSD	/	/			06/30/97	1546	JKP	VOA1
84273-4	/	/			06/28/97	2206	JKP	VOA1
84273-5	/	/			06/28/97	2240	JKP	VOA1
84273-6	/	/			06/28/97	2315	JKP	VOA1
84273-7	/	/			06/28/97	2350	JKP	VOA1
84273-8	/	/			06/29/97	0025	JKP	VOA1
84273-9	/	/			06/29/97	0100	JKP	VOA1
84273-11	/	/			06/29/97	0135	JKP	VOA1
84273-11MS	/	/			06/29/97	0245	JKP	VOA1
84273-11MSD	/	/			06/29/97	0320	JKP	VOA1
84273-14	/	/			06/29/97	0355	JKP	VOA1
84273-15	/	/			06/29/97	0430	JKP	VOA1
31041BLK1B	/	/			06/29/97	2033	JKP	VOA1
84221-5	/	/			06/30/97	0211	JKP	VOA1
84221-6	/	/			06/30/97	0245	JKP	VOA1
84273-10	/	/			06/30/97	0320	JKP	VOA1
84273-16	/	/			06/30/97	0355	JKP	VOA1
31041BLK	/	/			06/30/97	0430	JKP	VOA1
84273-14RA	/	/			06/30/97	0505	JKP	VOA
84273-15RA	/	/			06/30/97	0540	JKP	VOA1
31041BLK1C	/	/			07/02/97	1031	JKP	VOA1
84424-1	/	/			07/02/97	1141	JKP	VOA1
31041BLK2A	/	/			07/08/97	1334	JKP	VOA2
84537-5	/	/			07/08/97	1408	JKP	VOA2
31041BLK1D	/	/			07/14/97	1036	JKP	VOA1
84684	/	/			07/15/97	0241	JKP	VOA1
84710	/	/			07/15/97	0316	JKP	VOA1
84710DUP	/	/			07/18/97	0439	JKP	VOA1
84899	/	/			07/18/97	1543	JKP	VOA2

Analytical Services Inc. Batch QC  
 For Report Number :84273  
 Volatile Organics

Matrix : Soil/Sediment

Batch # 31082

Method : EPA 8240/8260

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	104	102	2	61 - 145	0 - 14
Trichloroethene	105	105	0	71 - 120	0 - 14
Benzene	96	97	1	76 - 127	0 - 11
Toluene	106	104	2	76 - 125	0 - 13
Chlorobenzene	104	105	1	75 - 130.	0 - 13
^^Note : BATCH PASSES ON LCS/LCSD DATA					

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	103	104	1	61 - 145	0 - 14
Trichloroethene	106	108	2	71 - 120	0 - 14
Benzene	107	108	1	76 - 127	0 - 11
Toluene	138	131	5	76 - 125	0 - 13
Chlorobenzene	113	112	1	75 - 130	0 - 13
^^Note : BATCH PASSES ON LCS/LCSD DATA					

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Soil/Sediment Batch # 31082

Method : EPA 8240/8260

## % Recovery Objectives

---

S1	1,2-Dichloroethane-d4	70 - 121
S2	Toluene-d8	81 - 117
S3	Ethylbenzene-d10	79 - 115
S4	4-Bromofluorobenzene	74 - 121

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Sample	File	S1	S2	S3	S4	S5	S6
<hr/>							
31082BLK1A	>LR581	110	95	100	112		
84273-16	>LR594	99	98	102	100		
84273-16MS	>LR595	108	100	101	101		
31082BLK1B	>LR542	93	100	105	103		
31082LCS	>LR558	85	104	114	105		
31082LCSD	>LR559	93	104	113	111		
84273-16MSD	>LR596	110	99	101	100		

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Sample Batch Information  
Volatile Organics Method : EPA 8240/8260

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Sample ID	Preparation Date	Time By	Preparation Notes	Analysis Date	Time By	Inst #
31082BLK1A	/	/		07/01/97	1038 JKP	VOA1
84273-16	/	/		07/01/97	1539 JKP	VOA1
84273-16MS	/	/		07/01/97	1615 JKP	VOA1
31082BLK1B	/	/		06/30/97	0955 JKP	VOA1
31082LCS	/	/		06/30/97	1511 JKP	VOA1
31082LCSD	/	/		06/30/97	1546 JKP	VOA1
84273-16MSD	/	/		07/01/97	1650 JKP	VOA1

Analytical Services Inc. Batch QC  
For Report Number :84273

## QC Batch General Information

Batch Number	Analyte	Analysis Method	Matrix	Blank Result	Prep. Method
30512	Tl	EPA 7841	Soil	< 0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
30512	Se	EPA 7740	Soil	< 0.0100	
30512	As	EPA 7060	Soil	< 0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
30522	Tl	EPA 7841	Aqueous	< 0.0020	
^^Note : BATCH PASSES ON LCS/LCSD/MS/MSD DATA					
30522	Se	EPA 7740	Aqueous	< 0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
30522	As	EPA 7060	Aqueous	< 0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
30527	Ag	EPA 6010	Aqueous	< 0.0050	
30527	Ba	EPA 6010	Aqueous	< 0.0100	
30527	Be	EPA 6010	Aqueous	< 0.0030	
30527	Cd	EPA 6010	Aqueous	< 0.0050	
30527	Cr	EPA 6010	Aqueous	< 0.0050	
30527	Cu	EPA 6010	Aqueous	< 0.0200	
30527	Ni	EPA 6010	Aqueous	< 0.0050	
30527	Pb	EPA 6010	Aqueous	< 0.0100	
30527	Sb	EPA 6010	Aqueous	< 0.0060	
30527	Zn	EPA 6010	Aqueous	< 0.0100	
^^Note : BATCH PASSES ON LCS/LCSD/MS/PDS DATA					
30529	Ag	EPA 6010	Soil	< 0.0050	
30529	Ba	EPA 6010	Soil	< 0.0100	
30529	Be	EPA 6010	Soil	< 0.0050	
30529	Cd	EPA 6010	Soil	< 0.0050	
30529	Cr	EPA 6010	Soil	< 0.0100	
30529	Cu	EPA 6010	Soil	< 0.0200	
30529	Ni	EPA 6010	Soil	< 0.0200	
30529	Pb	EPA 6010	Soil	< 0.0100	
30529	Sb	EPA 6010	Soil	< 0.0500	
30529	Zn	EPA 6010	Soil	< 0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
30904	%Moist	ASTM D 2216	Soil	0.0000	
30918	Hg	EPA 7470	AQUEOUS	< 0.0002	
30919	Hg	EPA 7471	Soil	< 0.0002	
30921	Hg	EPA 7471	Soil	< 0.0002	
31062	CN	EPA 9010	Aq/Solid	< 0.0200	
31065	CN	EPA 9010	Aq/Solid	< 0.0200	

Analytical Services Inc. Batch QC  
For Report Number :84273

## Lab Control Information

Batch Number	Analyte	Method	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
30512	Tl	EPA 7841	78	84	7	76 - 124	0 - 30
30512	Se	EPA 7740	108	109	1	76 - 124	0 - 30
30512	As	EPA 7060	88	88	0	76 - 124	0 - 30
30522	Tl	EPA 7841	91	91	0	76 - 124	0 - 20
30522	Se	EPA 7740	93	112	19	76 - 124	0 - 20
30522	As	EPA 7060	95	93	2	76 - 124	0 - 20
30527	Ag	EPA 6010	100	100	0	76 - 124	0 - 20
30527	Ba	EPA 6010	100	100	0	76 - 124	0 - 20
30527	Be	EPA 6010	99	98	1	76 - 124	0 - 20
30527	Cd	EPA 6010	96	95	1	76 - 124	0 - 20
30527	Cr	EPA 6010	97	95	2	76 - 124	0 - 20
30527	Cu	EPA 6010	98	96	2	76 - 124	0 - 20
30527	Ni	EPA 6010	98	97	1	76 - 124	0 - 20
30527	Pb	EPA 6010	98	97	1	76 - 124	0 - 20
30527	Sb	EPA 6010	99	99	0	76 - 124	0 - 20
30527	Zn	EPA 6010	93	90	3	76 - 124	0 - 20
30529	Ag	EPA 6010	89	87	2	76 - 124	0 - 30
30529	Ba	EPA 6010	91	89	2	76 - 124	0 - 30
30529	Be	EPA 6010	87	85	2	76 - 124	0 - 30
30529	Cd	EPA 6010	85	82	4	76 - 124	0 - 30
30529	Cr	EPA 6010	84	82	2	76 - 124	0 - 30
30529	Cu	EPA 6010	88	85	3	76 - 124	0 - 30
30529	Ni	EPA 6010	87	85	2	76 - 124	0 - 30
30529	Pb	EPA 6010	87	85	2	76 - 124	0 - 30
30529	Sb	EPA 6010	88	86	2	76 - 124	0 - 30
30529	Zn	EPA 6010	81	76	6	76 - 124	0 - 30
30918	Hg	EPA 7470	89	92	3	76 - 124	0 - 30
30919	Hg	EPA 7471	94	95	1	76 - 124	0 - 30
30921	Hg	EPA 7471	95	93	2	76 - 124	0 - 30
31062	CN	EPA 9010	87	90	3	85 - 115	0 - 30
31065	CN	EPA 9010	87	87	0	85 - 115	0 - 30

Analytical Services Inc. Batch QC  
For Report Number :84273

## Matrix Spike Information

Batch Number	Analyte	Method	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
30512	Tl	EPA 7841	75	75	0	76 - 124	0 - 30
30512	Se	EPA 7740	107	106	1	76 - 124	0 - 30
30512	As	EPA 7060	69	69	0	76 - 124	0 - 30
30522	Tl	EPA 7841	81	81	0	76 - 124	0 - 20
30522	Se	EPA 7740	35	31	12	76 - 124	0 - 20
30522	As	EPA 7060	63	63	0	76 - 124	0 - 20
30527	Ag	EPA 6010	97	92	5	76 - 124	0 - 20
30527	Ba	EPA 6010	94	90	4	76 - 124	0 - 20
30527	Be	EPA 6010	92	88	4	76 - 124	0 - 20
30527	Cd	EPA 6010	89	85	5	76 - 124	0 - 20
30527	Cr	EPA 6010	89	85	5	76 - 124	0 - 20
30527	Cu	EPA 6010	88	83	6	76 - 124	0 - 20
30527	Ni	EPA 6010	89	86	3	76 - 124	0 - 20
30527	Pb	EPA 6010	91	86	6	76 - 124	0 - 20
30527	Sb	EPA 6010	91	87	4	76 - 124	0 - 20
30527	Zn	EPA 6010	77	69	11	76 - 124	0 - 20
30529	Ag	EPA 6010	88	87	1	76 - 124	0 - 30
30529	Ba	EPA 6010	90	89	1	76 - 124	0 - 30
30529	Be	EPA 6010	87	85	2	76 - 124	0 - 30
30529	Cd	EPA 6010	82	78	5	76 - 124	0 - 30
30529	Cr	EPA 6010	82	85	4	76 - 124	0 - 30
30529	Cu	EPA 6010	88	86	2	76 - 124	0 - 30
30529	Ni	EPA 6010	85	81	5	76 - 124	0 - 30
30529	Pb	EPA 6010	84	82	2	76 - 124	0 - 30
30529	Sb	EPA 6010	85	83	2	76 - 124	0 - 30
30529	Zn	EPA 6010	70	66	6	76 - 124	0 - 30
30918	Hg	EPA 7470	88	88	0	76 - 124	0 - 30
30919	Hg	EPA 7471	96	98	2	76 - 124	0 - 30
30921	Hg	EPA 7471	97	95	2	76 - 124	0 - 30
31062	CN	EPA 9010	***	***	0	75 - 125	0 - 30
31065	CN	EPA 9010	95	89	7	75 - 125	0 - 30



Analytical Services Inc. Batch QC  
For Report Number :84273

# Digestion Spike Information

Batch Number	Analyte	Method	PDS %Rec	%Recovery Range
30512	Tl	EPA 7841	60	76 - 124
30512	Se	EPA 7740	94	76 - 124
30512	As	EPA 7060	60	76 - 124
30522	Tl	EPA 7841	68	76 - 124
30522	Se	EPA 7740	34	76 - 124
30522	As	EPA 7060	104	76 - 124
30527	Ag	EPA 6010	97	76 - 124
30527	Ba	EPA 6010	96	76 - 124
30527	Be	EPA 6010	94	76 - 124
30527	Cd	EPA 6010	91	76 - 124
30527	Cr	EPA 6010	91	76 - 124
30527	Cu	EPA 6010	91	76 - 124
30527	Ni	EPA 6010	92	76 - 124
30527	Pb	EPA 6010	93	76 - 124
30527	Sb	EPA 6010	95	76 - 124
30527	Zn	EPA 6010	82	76 - 124
30529	Ag	EPA 6010	92	76 - 124
30529	Ba	EPA 6010	94	76 - 124
30529	Be	EPA 6010	90	76 - 124
30529	Cd	EPA 6010	83	76 - 124
30529	Cr	EPA 6010	89	76 - 124
30529	Cu	EPA 6010	92	76 - 124
30529	Ni	EPA 6010	86	76 - 124
30529	Pb	EPA 6010	86	76 - 124
30529	Sb	EPA 6010	89	76 - 124
30529	Zn	EPA 6010	75	76 - 124

# Unspiked Sample Duplicate Information

Batch Number	Analyte	Method	Sample 1 RPD	Sample 2 RPD	RPD Range
30904	%Moist	ASTM D 2216	0	2	0 - 40
31062	CN	EPA 9010	1	0	0 - 30
31065	CN	EPA 9010	0	14	0 - 30

Sample Batch Information  
Analysis : Tl, Se, As

Sample ID	Tag	Preparation Date	Preparation Time	Preparation By	Preparation Notes	Analysis Date	Analysis Time	Analysis By	Inst
30512BLANK	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
30512LCS	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
30512LCSD	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-12MS	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-12MSD	Tl	06/23/97	1910	MB	AKA 84273-13	06/25/97	1234	MCW	AA1
84273-13PDS	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-10DUP	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84221-28	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84221-3	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84221-5	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84221-6	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84223	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-10	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-11	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-12	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-13	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-14	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-15	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-16	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-17	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	A
84273-4	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-5	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-6	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-7	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-8	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
84273-9	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
S-BLK	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
HPS 690703	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
HPS	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
LCDI	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
LCDI	Tl	06/23/97	1910	MB		06/25/97	1234	MCW	AA1
30512BLANK	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
30512LCS	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
30512LCSD	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-12MS	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-12MSD	Se	06/23/97	1910	MB	AKA 84273-13	06/26/97	0805	MCW	AA1
84273-13PDS	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-10DUP	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84221-28	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84221-3	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84221-5	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84221-6	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84223	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-10	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-11	Se	06/23/97	1910	MB		06/26/97	0805	MCW	P
84273-12	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-13	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-14	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-15	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1

Sample Batch Information  
Analysis : Tl, Se, As

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
84273-16	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-17	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-4	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-5	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-6	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-7	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-8	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
84273-9	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
S-BLK	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
HPS 690703	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
HPS	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
LCDI	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
LCDI	Se	06/23/97	1910	MB		06/26/97	0805	MCW	AA1
30512BLANK	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
30512LCS	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
30512LCSD	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-12MS	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-12MSD	As	06/23/97	1910	MB	AKA 84273-13	06/27/97	1445	MCW	AA1
84273-13PDS	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-10DUP	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84221-28	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84221-3	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84221-5	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84221-6	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84223	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-10	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-11	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-12	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-13	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-14	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-15	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-16	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-17	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-4	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-5	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-6	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-7	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-8	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
84273-9	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
S-BLK	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
HPS 690703	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
HPS	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
LCDI	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1
LCDI	As	06/23/97	1910	MB		06/27/97	1445	MCW	AA1

Sample Batch Information  
Analysis : Tl, Se, As

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
84273-2	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
84273-3	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
84275	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
84278-21	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
84278-22	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
84278-23	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
84278-24	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
84278-25	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
84278-26	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
84278-27	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
84278-28	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
84278-29	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
84294-1	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
84294-2	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
84294-5	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
84302-1	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
84302-10	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
84302-5	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
84303	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
84327-3	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
30522BLANK	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
30522LCS	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
30522LCSD	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
84327-3MS	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
84327-3MSD	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
84294-2PDS	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
84302-1DUP	Tl	06/25/97	0730	MTK		06/25/97	1646	MCW	AA1
30522BLANK	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
30522LCS	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
30522LCSD	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
84327-3MS	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
84327-3MSD	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
84294-2PDS	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
84302-1DUP	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
84273-2	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
84273-3	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
84275	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
84278-21	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
84278-22	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
84278-23	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
84278-24	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
84278-25	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
84278-26	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
84278-27	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
84278-28	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
84278-29	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
84294-1	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
84294-2	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
84294-5	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1

Sample Batch Information  
Analysis : Tl, Se, As

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
84302-1	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
84302-10	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
84302-5	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
84303	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
84327-3	Se	06/25/97	0730	MTK		06/26/97	1608	MCW	AA1
30522BLANK	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
30522LCS	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
30522LCSD	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
84327-3MS	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
84327-3MSD	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
84294-2PDS	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
84302-1DUP	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
84273-2	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
84273-3	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
84275	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
84278-21	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
84278-22	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
84278-23	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
278-24	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
278-25	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
84278-26	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
84278-27	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
84278-28	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
84278-29	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
84294-1	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
84294-2	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
84294-5	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
84302-1	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
84302-10	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
84302-5	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
84303	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1
84327-3	As	06/25/97	0730	MTK		06/30/97	0716	MCW	AA1

Sample Batch Information  
Analysis :

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
30526BLANK		06/25/97	0825	CJC	TCLP	06/25/97	1753	MAB	ICP1
30526LCS		06/25/97	0825	CJC	TCLP	06/25/97	1758	MAB	ICP1
30526LCSD		06/25/97	0825	CJC	TCLP	06/25/97	1802	MAB	ICP1
84158-1MS		06/25/97	0825	CJC	TCLP	06/25/97	1806	MAB	ICP1
84158-1MSD		06/25/97	0825	CJC	TCLP	06/25/97	1811	MAB	ICP1
84158-1PDS		06/25/97	0825	CJC	TCLP	06/25/97	1815	MAB	ICP1
84158-2DUP		06/25/97	0825	CJC	TCLP	06/25/97	1820	MAB	ICP1
84158-1		06/25/97	0825	CJC	TCLP	06/25/97	1824	MAB	ICP1
84158-2		06/25/97	0825	CJC	TCLP	06/25/97	1828	MAB	ICP1
84273-5		06/25/97	0825	CJC	TCLP	06/25/97	1842	MAB	ICP1
84273-6		06/25/97	0825	CJC	TCLP	06/25/97	1846	MAB	ICP1
LCDI		06/25/97	0825	CJC	TCLP	06/25/97	1850	MAB	ICP1
LCDI		06/25/97	0825	CJC	TCLP	06/25/97	1855	MAB	ICP1
84221-5		06/25/97	1200	CJC	TCLP	06/25/97	1921	MAB	ICP1
84221-6		06/25/97	1200	CJC	TCLP	06/25/97	1934	MAB	ICP1
84273-10		06/25/97	1200	CJC	TCLP	06/25/97	1859	MAB	ICP1
84347		06/25/97	1200	CJC	TCLP	06/25/97	1903	MAB	ICP1
84311-2		06/25/97	1200	CJC	TCLP	06/25/97	1916	MAB	ICP1
84273-14		06/25/97	1200	CJC	TCLP	06/25/97	1912	MAB	ICP1
84311-1		06/25/97	1200	CJC	TCLP	06/25/97	1908	MAB	ICP1
84273-4		06/25/97	1200	CJC	TCLP	06/25/97	1938	MAB	ICP1
84273-7		06/25/97	1200	CJC	TCLP	06/25/97	1943	MAB	ICP1
84273-8		06/25/97	1200	CJC	TCLP	06/25/97	1947	MAB	ICP1
84273-9		06/25/97	1200	CJC	TCLP	06/25/97	1951	MAB	ICP1
84273-15		06/25/97	1200	CJC	TCLP	06/25/97	1956	MAB	ICP1
84273-16		06/25/97	1200	CJC	TCLP	06/25/97	2000	MAB	ICP1
84290-1		06/25/97	1200	CJC	TCLP	06/25/97	2004	MAB	ICP1

Sample Batch Information  
Analysis : Ag, Ba, Be, Cd, Cr, Cu, Ni, Pb, Sb, Zn

Sample ID	Preparation				Preparation Notes	Analysis				Inst
	Tag	Date	Time	By		Date	Time	By		
30527BLANK		06/25/97	0730	CJC	TRACE	06/25/97	1850	MLR	ICP2	
30527LCS		06/25/97	0730	CJC	TRACE	06/25/97	1854	MLR	ICP2	
30527LCSD		06/25/97	0730	CJC	TRACE	06/25/97	1858	MLR	ICP2	
84278-7MS		06/25/97	0730	CJC	TRACE	06/25/97	1902	MLR	ICP2	
84278-7MSD		06/25/97	0730	CJC	TRACE	06/25/97	1906	MLR	ICP2	
84278-1PDS		06/25/97	0730	CJC	TRACE	06/25/97	1910	MLR	ICP2	
84278-7DUP		06/25/97	0730	CJC	TRACE	06/25/97	1914	MLR	ICP2	
84273-2		06/25/97	0730	CJC	TRACE	06/25/97	1925	MLR	ICP2	
84273-3		06/25/97	0730	CJC	TRACE	06/25/97	1937	MLR	ICP2	
84277-1		06/25/97	0730	CJC	TRACE	06/25/97	1941	MLR	ICP2	
84278-1		06/25/97	0730	CJC	TRACE	06/25/97	1921	MLR	ICP2	
84278-10		06/25/97	0730	CJC	TRACE	06/25/97	1945	MLR	ICP2	
84278-11		06/25/97	0730	CJC	TRACE	06/25/97	1949	MLR	ICP2	
84278-12		06/25/97	0730	CJC	TRACE	06/25/97	1953	MLR	ICP2	
84278-13		06/25/97	0730	CJC	TRACE	06/25/97	1957	MLR	ICP2	
84278-14		06/25/97	0730	CJC	TRACE	06/25/97	2001	MLR	ICP2	
84278-15		06/25/97	0730	CJC	TRACE	06/25/97	2005	MLR	ICP2	
84278-16		06/25/97	0730	CJC	TRACE	06/25/97	2008	MLR	ICP2	
84278-17		06/25/97	0730	CJC	TRACE	06/25/97	2012	MLR	ICP2	
84278-18		06/25/97	0730	CJC	TRACE	06/25/97	2024	MLR	ICP2	
84278-19		06/25/97	0730	CJC	TRACE	06/25/97	2028	MLR	ICP2	
84278-2		06/25/97	0730	CJC	TRACE	06/25/97	2032	MLR	ICP2	
84278-20		06/25/97	0730	CJC	TRACE	06/25/97	2036	MLR	ICP2	
84278-3		06/25/97	0730	CJC	TRACE	06/25/97	2040	MLR	ICP2	
84278-4		06/25/97	0730	CJC	TRACE	06/25/97	2044	MLR	ICP2	
84278-5		06/25/97	0730	CJC	TRACE	06/25/97	2048	MLR	ICP2	
84278-7		06/25/97	0730	CJC	TRACE	06/25/97	1918	MLR	ICP2	

Sample Batch Information  
Analysis : Ag, Ba, Be, Cd, Cr, Cu, Ni, Pb, Sb, Zn

Sample ID	Preparation			Preparation Notes	Analysis			Inst
	Tag	Date	Time By		Date	Time	By	
30529BLANK		06/25/97	0825 MTK	TRACE	06/25/97	2100	MLR	ICP2
30529LCS		06/25/97	0825 MTK	TRACE	06/25/97	2104	MLR	ICP2
30529LCSD		06/25/97	0825 MTK	TRACE	06/25/97	2108	MLR	ICP2
84273-12MS		06/25/97	0825 MTK	AKA 84273-11	06/25/97	2113	MLR	ICP2
84273-13MSD		06/25/97	0825 MTK	AKA 84273-11	06/25/97	2133	MLR	ICP2
84273-13PDS		06/25/97	0825 MTK	AKA 84273-11	06/25/97	2138	MLR	ICP2
84273-10DUP		06/25/97	0825 MTK	AKA 84273-17	06/25/97	2142	MLR	ICP2
84221-6		06/25/97	0825 MTK	TRACE	06/25/97	2150	MLR	ICP2
84273-10		06/25/97	0825 MTK	TRACE	06/25/97	2154	MLR	ICP2
84273-11		06/25/97	0825 MTK	TRACE	06/25/97	2207	MLR	ICP2
84273-12		06/25/97	0825 MTK	TRACE	06/25/97	2146	MLR	ICP2
84273-14		06/25/97	0825 MTK	TRACE	06/25/97	2211	MLR	ICP2
84273-15		06/25/97	0825 MTK	TRACE	06/25/97	2215	MLR	ICP2
84273-16		06/25/97	0825 MTK	TRACE	06/25/97	2219	MLR	ICP2
84273-17		06/25/97	0825 MTK	TRACE	06/25/97	2224	MLR	ICP2
84273-4		06/25/97	0825 MTK	TRACE	06/25/97	2228	MLR	ICP2
84273-5		06/25/97	0825 MTK	TRACE	06/25/97	2232	MLR	ICP2
84273-6		06/25/97	0825 MTK	TRACE	06/25/97	2236	MLR	ICP2
84273-7		06/25/97	0825 MTK	TRACE	06/25/97	2240	MLR	ICP2
84273-8		06/25/97	0825 MTK	TRACE	06/25/97	2245	MLR	ICP2
84273-9		06/25/97	0825 MTK	TRACE	06/25/97	2257	MLR	ICP2
S-BLK		06/25/97	0825 MTK	TRACE	06/25/97	2322	MLR	ICP2
HPS 690703		06/25/97	0825 MTK	TRACE	06/25/97	2326	MLR	ICP2
HPS		06/25/97	0825 MTK	TRACE	06/25/97	2331	MLR	ICP2
84379-1		06/25/97	1530 MTK	TRACE	06/25/97	2301	MLR	ICP2
84379-2		06/25/97	1530 MTK	TRACE	06/25/97	2306	MLR	ICP2
84379-3		06/25/97	1530 MTK	TRACE	06/25/97	2310	MLR	ICP2
84379-4		06/25/97	1530 MTK	TRACE	06/25/97	2314	MLR	ICP2
84379-5		06/25/97	1530 MTK	TRACE	06/25/97	2318	MLR	ICP2



Sample Batch Information  
Analysis :

Sample ID	Preparation			Preparation Notes	Analysis			Inst
	Tag	Date	Time By		Date	Time	By	
84352-4		06/27/97	0900 CJC	TCLP	06/27/97	1411	MLR	ICP1
30535BLANK		06/27/97	0720 CJC	TCLP	06/27/97	1240	MLR	ICP1
30535LCS		06/27/97	0720 CJC	TCLP	06/27/97	1244	MLR	ICP1
30535LCSD		06/27/97	0720 CJC	TCLP	06/27/97	1248	MLR	ICP1
84273-13MS		06/27/97	0720 CJC	AKA 84273-12	06/27/97	1253	MLR	ICP1
84273-13MSD		06/27/97	0720 CJC	TCLP	06/27/97	1257	MLR	ICP1
84273-13PDS		06/27/97	0720 CJC	TCLP	06/27/97	1302	MLR	ICP1
84273-11DUP		06/27/97	0720 CJC	TCLP	06/27/97	1306	MLR	ICP1
84273-11		06/27/97	0720 CJC	TCLP	06/27/97	1310	MLR	ICP1
84273-12		06/27/97	0720 CJC	TCLP	06/27/97	1315	MLR	ICP1
84273-13		06/27/97	0720 CJC	TCLP	06/27/97	1319	MLR	ICP1
LCDI		06/27/97	0720 CJC	TCLP	06/27/97	1336	MLR	ICP1
LCDI		06/27/97	0720 CJC	TCLP	06/27/97	1341	MLR	ICP1
84366-1		06/27/97	0900 CJC	TCLP	06/27/97	1349	MLR	ICP1
84366-2		06/27/97	0900 CJC	TCLP	06/27/97	1354	MLR	ICP1
84374-3		06/27/97	0900 CJC	TCLP	06/27/97	1402	MLR	ICP1
84374-4		06/27/97	0900 CJC	TCLP	06/27/97	1406	MLR	ICP1
84416		06/27/97	0900 CJC	TCLP	06/27/97	1415	MLR	ICP1
84424-1		06/27/97	0900 CJC	TCLP	06/27/97	1345	MLR	ICP1
16		06/27/97	0900 CJC	PREFILTRATE	06/27/97	1419	MLR	ICP1

Sample Batch Information  
Analysis : %Moist

Sample ID	Tag	Preparation		Preparation Notes	Analysis			Inst
		Date	Time By		Date	Time	By	
84273-4		/	/		06/23/97	2015	JK	
84273-5		/	/		06/23/97	2015	JK	
84273-6		/	/		06/23/97	2015	JK	
84273-7		/	/		06/23/97	2015	JK	
84273-8		/	/		06/23/97	2015	JK	
84273-9		/	/		06/23/97	2015	JK	
84273-10		/	/		06/23/97	2015	JK	
84273-11		/	/		06/23/97	2015	JK	
84273-12		/	/		06/23/97	2015	JK	
84273-13		/	/		06/23/97	2015	JK	
84273-14		/	/		06/23/97	2015	JK	
84273-15		/	/		06/23/97	2015	JK	
84273-16		/	/		06/23/97	2015	JK	
84273-17		/	/		06/23/97	2015	JK	
84273-17DUP		/	/		06/23/97	2015	JK	

Sample Batch Information  
Analysis : Hg

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
84272-13	HG	06/25/97	1520	MB		06/26/97	1322	FBS	HG1
30918BLANK	HG	06/25/97	1520	MB		06/26/97	1226	FBS	HG1
30918LCS	HG	06/25/97	1520	MB		06/26/97	1229	FBS	HG1
30918LCSD	HG	06/25/97	1520	MB		06/26/97	1231	FBS	HG1
84278-25MS	HG	06/25/97	1520	MB		06/26/97	1241	FBS	HG1
84278-25MSD	HG	06/25/97	1520	MB		06/26/97	1243	FBS	HG1
84278-24DUP	HG	06/25/97	1520	MB		06/26/97	1349	FBS	HG1
84274-4	HG	06/25/97	1520	MB		06/26/97	1248	FBS	HG1
84176-2	HG	06/25/97	1520	MB		06/26/97	1300	FBS	HG1
84259-10	HG	06/25/97	1520	MB		06/26/97	1315	FBS	HG1
84259-12	HG	06/25/97	1520	MB		06/26/97	1318	FBS	HG1
84259-17	HG	06/25/97	1520	MB		06/26/97	1320	FBS	HG1
84259-2	HG	06/25/97	1520	MB		06/26/97	1306	FBS	HG1
84259-4	HG	06/25/97	1520	MB		06/26/97	1308	FBS	HG1
84259-5	HG	06/25/97	1520	MB		06/26/97	1310	FBS	HG1
84259-8	HG	06/25/97	1520	MB		06/26/97	1313	FBS	HG1
84272-8	HG	06/25/97	1520	MB		06/26/97	1325	FBS	HG1
84273-2	HG	06/25/97	1520	MB		06/26/97	1347	FBS	HG1
84273-3	HG	06/25/97	1520	MB		06/26/97	1329	FBS	HG1
75	HG	06/25/97	1520	MB		06/26/97	1335	FBS	HG1
84278-21	HG	06/25/97	1520	MB		06/26/97	1338	FBS	HG1
84278-22	HG	06/25/97	1520	MB		06/26/97	1340	FBS	HG1
84278-23	HG	06/25/97	1520	MB		06/26/97	1342	FBS	HG1
84278-24	HG	06/25/97	1520	MB		06/26/97	1345	FBS	HG1
84278-25	HG	06/25/97	1520	MB		06/26/97	1245	FBS	HG1

Sample Batch Information  
Analysis : Hg

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
30919BLANK	HG	06/25/97	1730	MB		06/26/97	1528	FBS	HG1
30919LCS	HG	06/25/97	1730	MB		06/26/97	1531	FBS	HG1
30919LCSD	HG	06/25/97	1730	MB		06/26/97	1533	FBS	HG1
84273-12MS	HG	06/25/97	1730	MB	AKA 84273-11	06/26/97	1535	FBS	HG1
84273-13MSD	HG	06/25/97	1730	MB	AKA 84273-11	06/26/97	1538	FBS	HG1
84273-11DUP	HG	06/25/97	1730	MB	AKA 84273-10	06/26/97	1644	FBS	HG1
84261-3	HG	06/25/97	1730	MB		06/26/97	1556	FBS	HG1
84273-10	HG	06/25/97	1730	MB		06/26/97	1604	FBS	HG1
84273-11	HG	06/25/97	1730	MB		06/26/97	1543	FBS	HG1
84273-4	HG	06/25/97	1730	MB		06/26/97	1611	FBS	HG1
84273-5	HG	06/25/97	1730	MB		06/26/97	1623	FBS	HG1
84273-6	HG	06/25/97	1730	MB		06/26/97	1630	FBS	HG1
84273-7	HG	06/25/97	1730	MB		06/26/97	1637	FBS	HG1

Sample Batch Information  
Analysis : Hg

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
84273-8	HG	06/26/97	1750	MB		06/27/97	1054	FBS	HG1
84273-9	HG	06/26/97	1750	MB		06/27/97	1101	FBS	HG1
30921BLANK	HG	06/26/97	1750	MB		06/27/97	0936	FBS	HG1
30921LCS	HG	06/26/97	1750	MB		06/27/97	0938	FBS	HG1
30921LCSD	HG	06/26/97	1750	MB		06/27/97	0940	FBS	HG1
84302-11MS	HG	06/26/97	1750	MB		06/27/97	0943	FBS	HG1
84302-11MSD	HG	06/26/97	1750	MB		06/27/97	0945	FBS	HG1
84302-2DUP	HG	06/26/97	1750	MB		06/27/97	1311	FBS	HG1
84273-14	HG	06/26/97	1750	MB		06/27/97	1028	FBS	HG1
84273-15	HG	06/26/97	1750	MB		06/27/97	1035	FBS	HG1
84273-16	HG	06/26/97	1750	MB		06/27/97	1042	FBS	HG1
84295-1	HG	06/26/97	1750	MB		06/27/97	1108	FBS	HG1
84143	HG	06/26/97	1750	MB		06/27/97	1111	FBS	HG1
84145-3	HG	06/26/97	1750	MB		06/27/97	1142	FBS	HG1
84171	HG	06/26/97	1750	MB		06/27/97	1133	FBS	HG1
84172-3	HG	06/26/97	1750	MB		06/27/97	1158	FBS	HG1
84172-7	HG	06/26/97	1750	MB		06/27/97	1212	FBS	HG1
84223	HG	06/26/97	1750	MB		06/27/97	1219	FBS	HG1
84352-1	HG	06/26/97	1750	MB		06/27/97	1226	FBS	HG1
52-4	HG	06/26/97	1750	MB		06/27/97	1238	FBS	HG1
84302-11	HG	06/26/97	1750	MB		06/27/97	0947	FBS	HG1
84302-13	HG	06/26/97	1750	MB		06/27/97	1245	FBS	HG1
84302-15	HG	06/26/97	1750	MB		06/27/97	1252	FBS	HG1
84302-2	HG	06/26/97	1750	MB		06/27/97	1304	FBS	HG1

Sample Batch Information  
Analysis :

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
84273-7	HG	06/27/97	2040	MB	AKA 84273-13	06/30/97	1220	FBS	HG1
30922BLANK	HG	06/27/97	2040	MB		06/30/97	1147	FBS	HG1
30922LCS	HG	06/27/97	2040	MB		06/30/97	1150	FBS	HG1
30922LCSD	HG	06/27/97	2040	MB		06/30/97	1152	FBS	HG1
84221-6MS	HG	06/27/97	2040	MB		06/30/97	1154	FBS	HG1
84221-6MSD	HG	06/27/97	2040	MB		06/30/97	1157	FBS	HG1
84158-2DUP	HG	06/27/97	2040	MB		06/30/97	1254	FBS	HG1
84158-1	HG	06/27/97	2040	MB		06/30/97	1204	FBS	HG1
84158-2	HG	06/27/97	2040	MB		06/30/97	1206	FBS	HG1
84221-5	HG	06/27/97	2040	MB		06/30/97	1246	FBS	HG1
84221-6	HG	06/27/97	2040	MB		06/30/97	1159	FBS	HG1
84273-10	HG	06/27/97	2040	MB		06/30/97	1227	FBS	HG1
84273-11	HG	06/27/97	2040	MB		06/30/97	1230	FBS	HG1
84273-12	HG	06/27/97	2040	MB		06/30/97	1232	FBS	HG1
84273-14	HG	06/27/97	2040	MB		06/30/97	1234	FBS	HG1
84273-15	HG	06/27/97	2040	MB		06/30/97	1242	FBS	HG1
84273-16	HG	06/27/97	2040	MB		06/30/97	1244	FBS	HG1
84273-4	HG	06/27/97	2040	MB		06/30/97	1213	FBS	HG1
84273-5	HG	06/27/97	2040	MB		06/30/97	1216	FBS	HG1
84273-6	HG	06/27/97	2040	MB		06/30/97	1218	FBS	HG1
84273-8	HG	06/27/97	2040	MB		06/30/97	1223	FBS	H
84273-9	HG	06/27/97	2040	MB		06/30/97	1225	FBS	HG1
84290-1	HG	06/27/97	2040	MB		06/30/97	1201	FBS	HG1
84416	HG	06/27/97	2040	MB		06/30/97	1249	FBS	HG1
84424-1	HG	06/27/97	2040	MB		06/30/97	1251	FBS	HG1

Sample Batch Information  
Analysis : CN

Sample ID	Preparation			Preparation Notes	Analysis			Inst
	Tag	Date	Time By		Date	Time	By	
31062BLK		06/29/97	0855 ARS	MIDI-DIST	06/29/97	1200	ARS	GENE5
31062LCS		06/29/97	0855 ARS	MIDI-DIST	06/29/97	1200	ARS	GENE5
31062LCSD		06/29/97	0855 ARS	MIDI-DIST	06/29/97	1200	ARS	GENE5
84273-11MS		06/29/97	0855 ARS	AKA 84273-12	06/29/97	1200	ARS	GENE5
84273-11MSD		06/29/97	0855 ARS	AKA 84273-13	06/29/97	1200	ARS	GENE5
84273-10		06/29/97	0855 ARS	MIDI-DIST	06/29/97	1200	ARS	GENE5
84273-4		06/29/97	0855 ARS	MIDI-DIST	06/29/97	1200	ARS	GENE5
84273-5		06/29/97	0855 ARS	MIDI-DIST	06/29/97	1200	ARS	GENE5
84273-6		06/29/97	0855 ARS	MIDI-DIST	06/29/97	1200	ARS	GENE5
84273-6DUP		06/29/97	0855 ARS	MIDI-DIST	06/29/97	1200	ARS	GENE5
84273-7		06/29/97	1123 ARS	MIDI-DIST	06/29/97	1520	ARS	GENE5
31062CAL5		06/29/97	1123 ARS	MIDI-DIST	06/29/97	1520	ARS	GENE5
31062CAL15		06/29/97	1123 ARS	MIDI-DIST	06/29/97	1520	ARS	GENE5
84273-8		06/29/97	1123 ARS	MIDI-DIST	06/29/97	1520	ARS	GENE5
84273-9		06/29/97	1123 ARS	MIDI-DIST	06/29/97	1520	ARS	GENE5
84273-11		06/29/97	1123 ARS	MIDI-DIST	06/29/97	1520	ARS	GENE5
84273-14		06/29/97	1123 ARS	MIDI-DIST	06/29/97	1520	ARS	GENE5
84273-15		06/29/97	1123 ARS	MIDI-DIST	06/29/97	1520	ARS	GENE5
84273-16		06/29/97	1123 ARS	MIDI-DIST	06/29/97	1520	ARS	GENE5
84273-17		06/29/97	1123 ARS	MIDI-DIST	06/29/97	1520	ARS	GENE5
84273-3		06/29/97	1123 ARS	MIDI-DIST	06/30/97	1005	ARS	GENE5
84221-10		06/29/97	1123 ARS	MIDI-DIST	06/30/97	1005	ARS	GENE5
84273-6RA		07/01/97	1150 ARS	MIDI-DIST	07/01/97	1540	ARS	GENE5
84273-6RADUP		07/01/97	1150 ARS	MIDI-DIST	07/01/97	1540	ARS	GENE5
84273-14RA		07/01/97	1150 ARS	MIDI-DIST	07/01/97	1540	ARS	GENE5
84273-14RADUP		07/01/97	1150 ARS	MIDI-DIST	07/01/97	1540	ARS	GENE5
31065BLK		07/01/97	0925 ARS	MIDI-DIST	07/01/97	1340	ARS	GENE5

Project Number TF0320-015  
Project Location GROSS-BIRMINGHAM  
Laboratory ASI  
Sampler(s)/Affiliation J. HUGHES  
D. PAGE G317

DATE/TIME  
SAMPLE IDENTITY Code Sampled Lab ID

SAMPLE BOTTLE / CONTAINER DESCRIPTION												TOTAL
EPA 8260 40ml GLASS VIAL HCL												3
EPA 8260 40ml GLASS VIAL												3
TEMP (VOCs) 1 LITER GLASS JAR												3
TEMP (VOCs) 4oz GLASS JAR												3
70619-2D-23-T8001	L											3
70619-LD-23-G0001	L	6/19/97 1420										3
70619-LD-23-F0001	L	↑ 1410										3
70619-LD-23-S0001	M/MSDS	1440		1	1							2
70619-LD-24-SM0003	S	1195		1	1							2
70619-LD-24-SM0004	S	1215		1	1							2
70619-LD-24-SM0001	S	1050		1	1							2
70619-LD-23-SM0001	S	1440		1	1							2
70619-LD-23-SM0002	S	1530		1	1							2
70619-LD-24-SM0002	S	1120		1	1							2
70619-LD-24-SM0001	S			1	1							2
70619-LD-39-SM0006	S	1725		1		2						3
70619-LD-23-SM0003	S	1555		1		2						3
70619-LD-39-SM0005	S	1710		1		2						3
70619-LD-23-SM0001	S	6/19/97 1605		1		2						3

Sample Code: L = Liquid; S = Solid; A = Air

Coarse Total No. of Bottles/Containers

37

Relinquished by: <u>[Signature]</u>	Organization: <u>GEM (TAMPA)</u>	Date: <u>6/20/97</u> Time: <u>1315</u>	Seal Intact? Yes No N/A
Received by: <u>Wyn Jones</u>	Organization: <u>ASI</u>	Date: <u>6/20/97</u> Time: <u>1315</u>	Yes No N/A
Relinquished by: <u>[Signature]</u>	Organization: <u>ASI</u>	Date: <u>1/1/97</u> Time: <u></u>	Seal Intact? Yes No N/A
Received by: <u>[Signature]</u>	Organization: <u>ASI</u>	Date: <u>6/20/97</u> Time: <u>1300</u>	Yes No N/A

Special Instructions/Remarks:

DIRECT ANY/ALL QUESTIONS TO KATHY THALMAN AT 813 961 1921

ice, no seal, temp = 10, pH = 1 (metals) 12 (Cu)

Delivery Method: ☒ In Person ☐ Common Carrier ☐ Lab Courier ☐ Other

ASI #

-1  
-2  
-3  
-12  
-8  
-9  
-6  
-11  
-14  
-7  
-10  
-5  
-1  
-16





Laboratory Task Order No. 1740d

## CHAIN-OF-CUSTODY RECORD

Page 2 of 2

Project Number TF0320.015  
Project Location SOUSS-BIRMINGHAM  
Laboratory ASL  
Sampler(s)/Affiliation J. HUGUES / G&M  
D. PAGE

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID
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EP A8260  
A02 GWS Jm2

SAMPLE BOTTLE / CONTAINER DESCRIPTION

TOTAL

9-LO-23-SM5001	S	6/19/97	—
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Cover

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/  
Containers

38

Relinquished by: <u>[Signature]</u>	Organization: <u>GSM (TAMPA)</u>	Date: <u>6/20/97</u> Time: <u>1315</u>
Received by: <u>[Signature]</u>	Organization: <u>ASI</u>	Date: <u>6/20/97</u> Time: <u>1315</u>
Relinquished by: <u>[Signature]</u>	Organization: _____	Date: <u>1/1</u> Time: _____
Received by: <u>[Signature]</u>	Organization: <u>ASI</u>	Date: <u>6/30/97</u> Time: <u>1500</u>

	Seal Intact?
	Yes No N/A
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100	

Seal Intact?  
Yes No N/A

Special Instructions/Remarks:

Special Instructions/Remarks: DIRECT ALL QUESTIONS TO RUTH THAMAN AT 813 961 192/  
ice, no seal, temp = 6C, pH = 1 (metals) D(CW)

Delivery Method: ☒ In Person ☐ Common Carrier \_\_\_\_\_

☐ Lab Courier      ☐ Other \_\_\_\_\_

SPECIES

**SPECIFY**

Project Number FE320.015

Project Location GROSS-BIRMINGHAM

Laboratory ASI

Sampler(s)/Affiliation J. AUGILES / GEM  
D. PAGE

Date/Time

SAMPLE IDENTITY Code Sampled Lab ID

SAMPLE BOTTLE / CONTAINER DESCRIPTION

														TOTAL	
77061	9-LD-24-S10002	S	6/19/97	1120		1	1	1	1					4	-7
77061	9-LD-24-S10001	S	↑	—		1		1	1					3	-10
77061	9-LD-24-S10006	S	1735			1	1	1	1					4	-5
77061	9-LD-24-S10005	S	1725			1	1	1	1					4	-4
77061	9-LD-24-S10001	S	1050			1		1	1					3	-6
77061	9-LD-23-S10001	S	1050			1	1	1	1					4	-12
77061	9-LD-23-S10001	S	1440			1	1	1	1					4	-11
77061	9-LD-23-S10001	S	1605						1					1	-16
77061	9-LD-24-S10003	S	1435			1	1	1	1					4	-8
77061	9-LD-24-S10004	S	1215			1	1	1	1					4	-9
77061	9-LD-23-S10001	S	6/19/97	—		1	1	1						3	-17

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers

38

Relinquished by: [Signature]

Organization: GEM (TAMPA)

Date 6/20/97 Time 1315

Seal Intact?

Received by: [Signature]

Organization: ASI

Date 6/20/97 Time 1315

Yes No N/A

Relinquished by: [Signature]

Organization: ASI

Date 1/1/97 Time 1500

Seal Intact?

Received by: [Signature]

Organization: ASI

Date 6/20/97 Time 1500

Yes No N/A

Special Instructions/Remarks:

DIRECT ALL QUESTIONS TO KATHY THAMMAN AT 813 961 1921

ice, no seal temp = 6C, pH = 12 (metals) 12 (CN)

Delivery Method:

☒ In Person

☐ Common Carrier

☐ Lab Courier

☐ Other

**SPECIFY**



**VOLUME III**  
**SUBSURFACE SOIL**

**0353**

**ARCADIS** GERAGHTY & MILLER

# SLOSS INDUSTRIES

## DATA VALIDATION CHECKLIST

PROJECT NAME  
PROJECT NUMBER  
SAMPLE  
IDENTIFICATION(S)

(2)  
12/12/97

SAMPLE DATE (S)  
SAMPLE TEAM  
SAMPLE MATRIX  
ANALYZING LABORATORY  
ANALYSES REQUESTED  
QA REPORTING LEVEL  
LABORATORY REPORT NO.  
VALIDATION DATE

Sloss Industries					
TF320.015					
970804-LD-38-TB0001		970805-LD-23-FB0001			
970804-LD-38-SL0036 (5-7) a		970805-LD-23-EB0001			
970804-LD-38-SL0036 (10-12)		970805-LD-38-SL0027 (11-13)			
970804-LD-38-SL0026 (10-12)		970805-LD-38-SL0027 (22-24)			
970804-LD-38-SL0026 (18-20)		970805-LD-39-SL0034 (10-12)			
970804-LD-38-SL9036		970805-LD-23-SL0025 (19-21)			
970804-LD-38-SL9026		970805-LD-23-SL0025 (19-21)			
970805-LD-39-FB0001		970805-LD-23-SL0024 (7-9) a			
970805-LD-39-EB0001		970805-LD-23-SL0024 (14-16)			
(a) Additional sample collected for MS/MSD					
August 4 through 5, 1997					
Joe Hughes and David Page					
Soil, Sludge/Waste					
Analytical Services, Inc.					
Cyanide (9010), PPT Metals, 8260, 8270					
Geraghty & Miller, Inc.					
85657					
October 11, 1997					

## FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: *	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Sampling dates noted		X		X	
2. Sampling team indicated		X		X	
3. Sampling identification traceable to location collected		X		X	
4. Sample location		X		X	
5. Sample depth for soils		X		X	
6. Collection technique (bailer, pump, etc.)		X		X	
7. Field sample preparation techniques		X		X	
8. Sample type (grab, composite)		X		X	
9. Sample container type		X		X	
10. Preservation methods		X		X	
11. Chain-of-custody form completed		X		X	
12. Required analytical methods requested		X		X	
13. Field (water and soil) sample logs completed properly and signed		X		X	
14. Number and type of field QC samples collected (blanks, replicates, splits, etc.)		X		X <sup>(1)</sup>	
15. Field equipment calibration	X				X
16. Field equipment decontamination		X		X	
17. Sample shipping		X		X	
18. Laboratory task order		X		X	

\* Field sampling logs = water and/or soil/sediment sampling logs

QC - quality control

COMMENTS:

1) Field QC samples collected

Field Duplicate Pair 970804-LD-38-SL0036 (5-7) and 970804-LD-38-SL9036  
970804-LD-38-SL0026 (10-12) and 970804-LD-38-SL9026

MS/MSD 970804-LD-38-SL0036 (5-7)  
970805-LD-23-SL0024 (7-9)

Blanks 970804-LD-38-TB0001 Trip Blk  
970805-LD-39-FB0001 Field Blk  
970805-LD-39-EB0001 Equipment Blk  
970805-LD-23-FB0001 Field Blk  
970805-LD-23-EB0001 Equipment Blk

(K1)  
12/18/97

ANALYTICAL DATA PACKAGE DOCUMENTATION  
GENERAL INFORMATION

ALL QA REPORTING LEVELS:	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Method of analysis		X		X	
4. Detection limits of analysis		X		X	
5. Master tracking list		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preparation/extraction date		X		X	
9. Sample analysis date		X		X	
10. Copy of chain-of-custody form signed by lab sample custodian		X		X	
11. Narrative summary of QA or sample problems provided		X		X	

QA - quality assurance

COMMENTS : No qualification was necessary  
All analytical data were reported as Geraghty & Miller Level II data deliverables

**INORGANIC ANALYSES  
TOTAL METALS METHODS**

QA REPORTING LEVEL II REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Holding times		X		X	
2. Detection limits		X		X	
3. Calibration curve standards	X				X
4. Initial calibration verification %R	X				X
5. Continuing calibration verification %R	X				X
6. Blanks					
A. Preparation and calibration blanks		X		X	
B. Equipment rinsate blanks		X		X	
C. Field blanks		X		X	
7. Interference check sample %R (ICP only)	X				X
8. Dilution check sample %R (ICP only)	X				X
9. Laboratory control sample %R		X		X	
10. Matrix spike %R		X		X	
11. Lab duplicate or MSD %R and RPD	X				X
12. LCS duplicate %R and RPD		X		X	
13. Post-digestion analytical spike (FAA only)		X		X	
14. Field duplicate comparison		X		X	
15. Total and dissolved metals comparison	X				X

%R - percent recovery

RPD - relative percent difference

MSD - matrix spike duplicate

ICP - inductively coupled plasma atomic emission spectroscopy

FAA - furnace atomic absorption

NA - not applicable or not analyzed

**COMMENTS:**

This section was completed for Priority Pollutant Metals. Sloss soil data were qualified for each of the corresponding analytical batches where MS/MSD and PDS recoveries did not meet the control limit criteria. All qualified soil analytical results are presented in the attached summary table.

Analytical Batch	Analyte
31528	Sliver
31539	Arsenic



**INORGANIC ANALYSES  
WET CHEMISTRY METHODS**

QA REPORTING LEVEL II- REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Holding times		X		X	
2. Detection limits		X		X	
3. Calibration curve standards	X				X
4. Initial calibration verification %R	X				X
5. Continuing calibration verification %R	X				X
6. Blanks					
A. Preparation and calibration blanks		X		X	
B. Equipment rinsate blanks		X		X	
C. Field blanks		X		X	
7. Laboratory control sample %R		X		X	
8. Matrix spike %R		X		X	
9. Lab duplicate or MSD %R and RPD		X		X	
10. LCS duplicate %R and RPD		X		X	
11. Field duplicate comparison	X				X

%R - percent recovery                      RPD - relative percent difference                      MSD - matrix spike duplicate  
LCS - laboratory control sample duplicate                      NA - not applicable or not analyzed

**COMMENTS:**

This section was completed for cyanide data. Performance was acceptable. No sample qualification was necessary.

**ORGANIC ANALYSES  
VOLATILE ORGANIC COMPOUNDS**

QA REPORTING LEVEL II - REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	

**GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)**

1. Holding times		X		X	
2. Detection limits		X		X	
3. Blanks					
A. Water blanks (VOCs)		X		X	
B. Equipment rinsate blanks		X		X	
C. Field Blanks		X		X	
D. Trip blanks		X		X	
4. Instrument tune and performance check	X				X
5. Initial calibration RRFs and %RSDs	X				X
6. Continuing calibration RRFs and %Ds	X				X
7. Matrix spike (MS) %R		X		X	
8. Matrix spike duplicate (MSD) %R		X		X	
9. Sample specific lab duplicate (optional)	X				X
10. MS/MSD or lab duplicate precision (RPD)		X		X	
11. Reagent water spike (BS)		X		X	
12. Reagent water spike duplicate (BSD)		X		X	
13. BS/BSD precision (RPD)		X		X	
14. Laboratory control sample (optional)		X		X	
15. Surrogate spike recoveries		X		X	
16. Internal standard retention times and areas	X				X
17. Compound identification and quantitation					
A. Reconstructed ion chromatograms	X				X
B. Quantitation reports	X				X
18. TIC search (optional)	X				X
19. Field duplicate comparison	X				X

VOCs - volatile organic compounds

RRF - relative response factor

% RSD - percent relative standard deviation

%D - percent drift

%R - percent recovery

RPD - relative percent difference

BS - blank spike

BSD - blank spike duplicate

TIC - tentatively identified compound

COMMENTS: This section was completed for volatiles Method 8260. Performance was acceptable. No sample qualification was necessary.

**ORGANIC ANALYSES  
SEMIVOLATILE ORGANIC COMPOUNDS**

QA REPORTING LEVEL II REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	

**GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)**

**1. Holding times**

A. Extraction holding time

B. Analysis holding time

**2. Detection limits**

**3. Blanks**

A. Water blanks

B. Extraction blanks

C. Equipment rinsate blanks

D. Field Blanks

**4. Instrument tune and performance check**

**5. Initial calibration RRFs and %RSDs**

**6. Continuing calibration RRFs and %Ds**

**7. Matrix spike (MS) %R**

**8. Matrix spike duplicate (MSD) %R**

**9. Sample specific lab duplicate (optional)**

**10. MS/MSD or lab duplicate precision (RPD)**

**11. Laboratory control sample (LCS)**

**12. LCS duplicate (LCSD)**

**13. LCS/LCSD precision (RPD)**

**14. Surrogate spike recoveries**

**15. Internal standard retention times and areas**

**16. Compound identification and quantitation**

A. Reconstructed ion chromatograms

B. Quantitation reports

**17. TIC search (optional)**

**18. Field duplicate comparison**

	X		X	
	X		X	
	X		X	
	X		X	
X				X
X				X
X				X
	X		X	
	X		X	
X				X
	X		X	
	X		X	
	X		X	
	X		X <sup>(1)</sup>	
X				X
X				X
X				X
X				X

SVOCs - semivolatile organic compounds  
RRF - relative response factor  
% RSD - percent relative standard deviation

%D - percent drift  
%R - percent recovery  
RPD - relative percent difference

TIC - tentatively identified compound

**COMMENTS:** This section was completed for semivolatile Method 8270. Performance was acceptable. No sample qualification was necessary.

A summary of qualified analytical results associated with this data set are presented in the attached table.

VALIDATION PERFORMED BY: Cynthia Arnold

SIGNATURE: Cynthia Arnold

DATE: 10/14/97

Summary of Qual. Analytical Results  
for Soils, Sludges, and Waste  
ASI Data Package 85657  
Sloss Industries, Birmingham, AL

Page 1 of 1

G & M Sample ID.	Analyte	Concentration Detected	Qualifier	Reasons for Qualification
<i>ASI Laboratory Report No 85657</i>				
* 970804-LD-38-SL0036 (5-7)	Sliver	BDL	UJ	MS/MSD and PDS out of control limit criteria
970804-LD-38-SL0036 (10-12)	Sliver	BDL	UJ	MS/MSD and PDS out of control limit criteria
* 970804-LD-38-SL0026 (10-12)	Sliver	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Arsenic	3.3 mg/Kg	J	MS/MSD and PDS out of control limit criteria
970804-LD-38-SL0026 (18-20)	Sliver	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Arsenic	1.8 mg/Kg	J	MS/MSD and PDS out of control limit criteria
* 970804-LD-38-SL9036	Sliver	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Arsenic	3.5 mg/Kg	J	MS/MSD and PDS out of control limit criteria
* 970804-LD-38-SL9026	Sliver	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Arsenic	3.5 mg/Kg	J	MS/MSD and PDS out of control limit criteria
970805-LD-38-SL0027 (11-13)	Sliver	BDL	UJ	MS/MSD and PDS out of control limit criteria
970805-LD-38-SL0027 (22-24)	Sliver	BDL	UJ	MS/MSD and PDS out of control limit criteria
970805-LD-39-SL0034 (10-12)	Sliver	BDL	UJ	MS/MSD and PDS out of control limit criteria
970805-LD-23-SL0025 (19-21)	Sliver	BDL	UJ	MS/MSD and PDS out of control limit criteria
970805-LD-23-SL0024 (7-9)	Sliver	BDL	UJ	MS/MSD and PDS out of control limit criteria

Notes:

U - Non-detect

\* Field Duplicate pair

UJ - Non-detected estimated

J - Estimated

R - Rejected

10/14/97



**ASI****ANALYTICAL SERVICES, INC.**

ENVIRONMENTAL MONITORING &amp; LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

9/15/97

**Master List**  
**ASI #85657**

12/18/97

Sample #	G&M ID	Analysis	Notes
85657-1	970804-LD-38-TB0001	8260	
85657-2	970804-LD-38-SL0036(5-7)	9010,8260,8270,Metals	
85657-3	970804-LD-38-SL0036(5-7)MS/MSD	9010,8260,8270,Metals	
85657-4	970804-LD-38-SL0036(10-12)	9010,8260,8270,Metals	
85657-5	970804-LD-38-SL0026(10-12)	9010,8260,8270,Metals	
85657-6	970804-LD-38-SL0026(18-20)	9010,8260,8270,Metals	
85657-7	970804-LD-38-SL9036	9010,8260,8270,Metals	
85657-8	970804-LD-38-SL9026	9010,8260,8270,Metals	
85657-9	970805-LD-39-FB0001	9010,8260,8270,Metals	
85657-10	970805-LD-39-EB0001	9010,8260,Metals	BN/A containers BIT
85657-11	970805-LD-23-FB0001	9010,8260,8270,Metals	
85657-12	970805-LD-23-EB0001	9010,8260,8270,Metals	
85657-13	970805-LD-38-SL0027(11-13)	9010,8260,8270,Metals	
85657-14	970805-LD-38-SL0027(22-24)	9010,8270,Metals	Voa containers BIT
85657-15	970805-LD-39-SL0034(10-12)	9010,8270,Metals	Voa containers BIT
85657-16	970805-LD-23-SL0025(19-21)	9010,8260,8270,Metals	
85657-17	970805-LD-23-SL0024(7-9)	9010,8260,8270,Metals	
85657-18	970805-LD-23-SL0024(7-9)MS/MSD	9010,8260,8270,Metals	
85657-19	970805-LD-23-SL0024(14-16)	9010,8260,8270,Metals	

0363

12 September, 1997

## Case Narrative Report 85657

The samples were collected on 4-5 August, 1997 and received by ASI 6 August, 1997. Conditions of sample receipt were documented on the Chain of Custody and included paperwork. The samples were logged into the LIMS as report 85657 for the following analyses as per client request: Aqueous samples - BNA (EPA 8270), VOA (EPA 8260), Metals (EPA 6010, 7060, 7841, 7740, 7470), and CN (EPA 9010); Solid samples - BNA (EPA 8270), VOA (EPA 8260), Metals (EPA 6010, 7060, 7841, 7740, 7471), CN (EPA 9010), and Moisture (ASTM D 2216). All holding times for sample preparation and analysis were met.

BNA analysis (EPA 8270) for aqueous samples gave acceptable spike recoveries with exception of low MSD on 1,4-Dichlorobenzene, low MS on 4-Nitrophenol and Pentachlorophenol, and high MSRPD on 2-Chlorophenol, 4-Nitrophenol and Pentachlorophenol. Surrogate recoveries were acceptable with the single exception of low 2-Fluorophenol on 85447-2MS.

VOA analysis (EPA 8260) for aqueous samples met all data quality objectives.

Metals analysis (EPA 6010) for aqueous samples was split into two batches. Batch #31510 gave acceptable recoveries for all quality controls with exception that Zn had a low MSD recovery and high MSRPD and Cr had a high LCSRPD. Batch #31518 met all data quality objectives. As analysis (EPA 7060) gave low MS/MSD/PDS and high MSRPD. Tl analysis (EPA 7841) gave high PDS. Se analysis (EPA 7740) gave high PDS. Hg analysis (EPA 7470) met all data quality objectives.

CN analysis (EPA 9010) for aqueous samples met all data quality objectives.

BNA analysis (EPA 8270) for solid samples met all data quality objectives.

VOA analysis (EPA 8260) for solid samples was split into two batches. Both batches met all data quality objectives. Sample 85657-16 was reanalyzed at a lesser dilution to provide adequate detection limits.

Metals analysis (EPA 6010) for solid samples was split into two batches. Batch #31528 gave low MS/MSD for Ag and Sb, and low PDS for Ag. Batch #32200 gave low MS/MSD for Cu, low MS for Ni and Zn. All other quality controls were acceptable. Sample 85657-7 was reanalyzed to confirm hits. As analysis (EPA 7060) gave low MS/MSD. Tl analysis (EPA 7841) met all data quality objectives. Se analysis (EPA

7740) gave low MS/MSD. Hg analysis (EPA 7471) was split into two batches. Both batches met all data quality objectives.

CN analysis (EPA 9010) for solid samples met all data quality objectives.

Moisture analysis (ASTM D 2216) met all data quality objectives.

A handwritten signature in black ink, appearing to read "J E Smith".

for  
Roy-Keith Smith, PhD  
Quality Assurance Manager



## Geraghty &amp; Miller, Inc.

Project Name: Sloss Industries

Project Number: TF0320.015

12/18/97

TEST	S85657_1	S85657_2	S85657_3	S85657_4
Sample ID :	970804-LD-38-TB0001	970804-LD-38-SL0036(5-7)	804-LD-38-SL0036(5-7)MS/	970804-LD-38-SL0036(10-12)
Moisture (%)		16.9	18.5	31.5
Cyanide	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)
Total Cyanide (CN)			0.21	
Metals	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)
Total Arsenic (As)(EPA 7060A)		4.2	1.3	4.8
Total Barium (Ba)(EPA 6010A)		140	56	110
Total Beryllium (Be)(EPA 6010A)				
Total Cadmium (Cd)(EPA 6010A)				
Total Chromium (Cr)(EPA 6010A)		8.9	7.2	11
Total Copper (Cu)(EPA 6010A)		16	3.9	9.3
Total Lead (Pb)(EPA 6010A)		28	16	6.0
Total Nickel (Ni)(EPA 6010A)		7.1		11
Total Zinc (Zn)(EPA 6010A)		58	26	96
Total Mercury (Hg)(EPA 7471)			0.32	
Volatile Organics (EPA 8260A)	(ug/L)	(ug/kg)	(ug/kg)	(ug/kg)
Acetone				
Toluene				
Acid Extractables (EPA 8270B)	(ug/L)	(ug/kg)	(ug/kg)	(ug/kg)
Base Neutral Extractables (EPA 8270B)	(ug/L)	(ug/kg)	(ug/kg)	(ug/kg)

## Geraghty &amp; Miller, Inc.

Project Name: Sloss Industries

Project Number: TF0320.015

EA 12/12/97

TEST	S85657_5	S85657_6	S85657_7	S85657_8
Sample ID :	970804-LD-38-SL0026(10-12)	970804-LD-38-SL0026(18-20)	970804-LD-38-SL9036	970804-LD-38-SL9026
Moisture (%)	24.9	13.6	17.7	24.9
Cyanide	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Total Cyanide (CN)				
Metals	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Total Arsenic (As)(EPA 7060A)	3.3	1.8	3.5	3.5
Total Barium (Ba)(EPA 6010A)	110	99	140	110
Total Beryllium (Be)(EPA 6010A)	1.9			1.6
Total Cadmium (Cd)(EPA 6010A)				
Total Chromium (Cr)(EPA 6010A)	9.3	15	7.9	8.5
Total Copper (Cu)(EPA 6010A)	6.5	6.5	21	15
Total Lead (Pb)(EPA 6010A)	6.4		16	5.5
Total Nickel (Ni)(EPA 6010A)	32	20	7.2	29
Total Zinc (Zn)(EPA 6010A)	76	60	57	51
Total Mercury (Hg)(EPA 7471)				
Volatile Organics (EPA 8260A)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Acetone				
Toluene				8
Acid Extractables (EPA 8270B)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Base Neutral Extractables (EPA 8270B)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)

## Geraghty &amp; Miller, Inc.

Project Name: Sloss Industries

Project Number: TF0320.015

TEST	S85657_9	S85657_10	S85657_11	S85657_12
Sample ID :	970805-LD-39-FB0001	970805-LD-39-EB0001	970805-LD-23-FB0001	970805-LD-23-EB0001
Moisture (%)				
Cyanide	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Total Cyanide (CN)				
Metals	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Total Arsenic (As)(EPA 7060A)				
Total Barium (Ba)(EPA 6010A)				
Total Beryllium (Be)(EPA 6010A)				
Total Cadmium (Cd)(EPA 6010A)				
Total Chromium (Cr)(EPA 6010A)				
Total Copper (Cu)(EPA 6010A)				
Total Lead (Pb)(EPA 6010A)				
Total Nickel (Ni)(EPA 6010A)				
Total Zinc (Zn)(EPA 6010A)				
Total Mercury (Hg)(EPA 7471)				
Volatile Organics (EPA 8260A)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
Acetone				
Toluene				
Acid Extractables (EPA 8270B)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
Base Neutral Extractables (EPA 8270B)	(ug/L)	(ug/L)	(ug/L)	(ug/L)

Geraghty & Miller, Inc.

Project Name: Sloss Industries

Project Number: TF0320.015

TEST	S85657_13	S85657_14	S85657_15	S85657_16
Sample ID :	970805-LD-38-SL0027(11-13)	970805-LD-38-SL0027(22-24)	970805-LD-39-SL0034(10-12)	970805-LD-23-SL0025(19-21)
Moisture (%)	17.4	34.3	17.0	22.7
Cyanide	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Total Cyanide (CN)			0.7	
Metals	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Total Arsenic (As)(EPA 7060A)	4.1	2.3	5.2	3.8
Total Barium (Ba)(EPA 6010A)	8.6	17	180	180
Total Beryllium (Be)(EPA 6010A)				
Total Cadmium (Cd)(EPA 6010A)				
Total Chromium (Cr)(EPA 6010A)	15	2.4	13	15
Total Copper (Cu)(EPA 6010A)				
Total Lead (Pb)(EPA 6010A)			10	
Total Nickel (Ni)(EPA 6010A)		4.4	6.0	18
Total Zinc (Zn)(EPA 6010A)	23	18	46	47
Total Mercury (Hg)(EPA 7471)				
Volatile Organics (EPA 8260A)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Acetone				110
Toluene				
Acid Extractables (EPA 8270B)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Base Neutral Extractables (EPA 8270B)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)

Geraghty & Miller, Inc.

Project Name: Sloss Industries

Project Number: TF0320.015

TEST	S85657_17	S85657_18	S85657_19
Sample ID :	970805-LD-23-SL0024(7-9)	805-LD-23-SL0024(7-9)MS/	970805-LD-23-SL0024(14-16)
Moisture (%)	18.4	20.0	30.5
Cyanide	(mg/kg)	(mg/kg)	(mg/kg)
Total Cyanide (CN)		0.18	
Metals	(mg/kg)	(mg/kg)	(mg/kg)
Total Arsenic (As)(EPA 7060A)	13	9.4	30
Total Barium (Ba)(EPA 6010A)	43	38	53
Total Beryllium (Be)(EPA 6010A)			0.7
Total Cadmium (Cd)(EPA 6010A)	2.5		2.4
Total Chromium (Cr)(EPA 6010A)	7.0	7.4	19
Total Copper (Cu)(EPA 6010A)	5.0		22
Total Lead (Pb)(EPA 6010A)	4.4		19
Total Nickel (Ni)(EPA 6010A)	45	55	66
Total Zinc (Zn)(EPA 6010A)	83	90	430
Total Mercury (Hg)(EPA 7471)			
Volatile Organics (EPA 8260A)	(ug/kg)	(ug/kg)	(ug/kg)
Acetone			
Toluene			
Acid Extractables (EPA 8270B)	(ug/kg)	(ug/kg)	(ug/kg)
Base Neutral Extractables (EPA 8270B)	(ug/kg)	(ug/kg)	(ug/kg)

0370

**Laboratory Report**

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85657-1

September 13, 1997

**Sample Description**

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970804-LD-38-TB0001, 08/04/97, 17:05, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
<b>Volatile Organics (EPA 8260A)</b>						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
75239	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75250	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
784	Iodomethane	BDL	5	ug/l	1	EPA 8260A
7833	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A

BDL - Below Detection Limit


## Sample Description

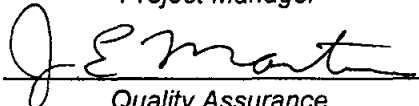
Sloss Industries

Water, G &amp; M Project #TF0320.015, 970804-LD-38-TB0001, 08/04/97, 17:05, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85657-2

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970804-LD-38-SL0036(5-7), 08/04/97, 14:00, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	16.9	0.05	%	1	
57125	Total Cyanide	BDL	0.2	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.0	mg/kg	1	EPA 6010A
7440382	Total Arsenic	4.2	1.2	mg/kg	1	EPA 7060A
7440393	Total Barium	140	1.2	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.6	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.6	mg/kg	1	EPA 6010A
7440473	Total Chromium	8.9	1.2	mg/kg	1	EPA 6010A
7440508	Total Copper	16	2.4	mg/kg	1	EPA 6010A
7439921	Total Lead	28	3.0	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.30	mg/kg	1	EPA 7471
7440020	Total Nickel	7.1	2.4	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.8	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	2.1	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.8	mg/kg	1	EPA 7841
7440666	Total Zinc	58	2.1	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	60	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	60	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	60	ug/kg	1	EPA 8260A
71432	Benzene	BDL	6	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	12	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
75063	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	12	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	12	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0373



## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970804-LD-38-SL0036(5-7), 08/04/97, 14:00, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	12	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	60	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	60	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	60	ug/kg	1	EPA 8260A
100425	Styrene	BDL	6	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	12	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	12	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	400	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	400	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	400	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	400	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	400	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2000	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2000	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	400	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2000	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	400	ug/kg	1	EPA 8270B
108952	Phenol	BDL	400	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0374

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970804-LD-38-SL0036(5-7), 08/04/97, 14:00, received 08/06/97

9  
(3) 12/13/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	400	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	400	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2000	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	400	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	400	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	400	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	400	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	400	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	400	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	400	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	400	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	400	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	400	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	400	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	400	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	400	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	400	ug/kg	1	EPA 8270B
105478	p-Chloroaniline	BDL	400	ug/kg	1	EPA 8270B
37	2-Chloronaphthalene	BDL	400	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	400	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	400	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	400	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	400	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	400	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2000	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	400	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	400	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	400	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	400	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	400	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	400	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	400	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	400	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	400	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	400	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	400	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	400	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	400	ug/kg	1	EPA 8270B
76	2-Methylnaphthalene	BDL	400	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	400	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0375

## Sample Description

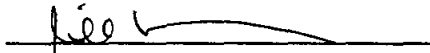
Sloss Industries

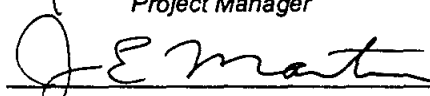
Soil, G &amp; M Project #TF0320.015, 970804-LD-38-SL0036(5-7), 08/04/97, 14:00, received 08/06/97

9/14/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	400	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	400	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	400	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	400	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	400	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	400	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	400	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85657-3

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970804-LD-36-SL0036(5-7)MS, 08/04/97, 14:00, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	0.2	0.2	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	110	5.0	mg/kg	1	EPA 6010A
7440382	Total Arsenic	140	1.0	mg/kg	1	EPA 7060A
7440393	Total Barium	750	1.0	mg/kg	1	EPA 6010A
7440417	Total Beryllium	86	0.5	mg/kg	1	EPA 6010A
7440439	Total Cadmium	31	0.5	mg/kg	1	EPA 6010A
7440473	Total Chromium	77	1.0	mg/kg	1	EPA 6010A
7440508	Total Copper	87	2.0	mg/kg	1	EPA 6010A
7439921	Total Lead	350	2.5	mg/kg	1	EPA 6010A
7439976	Total Mercury	1.92	0.25	mg/kg	1	EPA 7471
7440020	Total Nickel	160	2.0	mg/kg	1	EPA 6010A
7782492	Total Selenium	134	4.0	mg/kg	1	EPA 7740
7440224	Total Silver	27	1.0	mg/kg	1	EPA 6010A
7440280	Total Thallium	164	4.0	mg/kg	1	EPA 7841
7440666	Total Zinc	210	2.0	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	50	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/kg	1	EPA 8260A
71432	Benzene	54	5	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	5	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/kg	1	EPA 8260A
108907	Chlorobenzene	51	5	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/kg	1	EPA 8260A
7663	Chloroform	BDL	5	ug/kg	1	EPA 8260A
7873	Chloromethane	BDL	10	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/kg	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

0377

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970804-LD-38-SL0036(5-7)MS, 08/04/97, 14:00, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	44	5	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/kg	1	EPA 8260A
100425	Styrene	BDL	5	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/kg	1	EPA 8260A
108883	Toluene	55	5	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79016	Trichloroethene	46	5	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	5	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	1100	330	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	980	330	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	330	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	330	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	330	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	1700	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	1700	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	330	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	1060	1700	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	960	330	ug/kg	1	EPA 8270B
108952	Phenol	1030	330	ug/kg	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	330	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

0378

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970804-LD-38-SL0036(5-7)MS, 08/04/97, 14:00, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	330	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	1700	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	1040	330	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	330	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	330	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	330	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	330	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	330	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	330	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	330	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	330	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	330	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	330	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	330	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	330	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	330	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	330	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	330	ug/kg	1	EPA 8270B
95723	4-Chlorophenyl phenyl ether	BDL	330	ug/kg	1	EPA 8270B
18019	Chrysene	BDL	330	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	330	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	330	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	330	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	390	330	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	1700	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	330	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	330	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	740	330	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	330	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	330	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	330	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	330	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	330	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	330	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	330	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	330	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	330	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	330	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	330	ug/kg	1	EPA 8270B
1203	Naphthalene	BDL	330	ug/kg	1	EPA 8270B
1744	2-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B
100016	4-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

## Sample Description

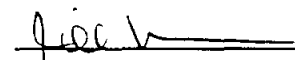
Sloss Industries

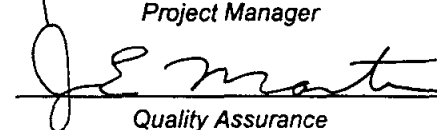
Soil, G &amp; M Project #TF0320.015, 970804-LD-38-SL0036(5-7)MS, 08/04/97, 14:00, received 08/06/97

9 (P) 12/12/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	330	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	330	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	480	330	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	330	ug/kg	1	EPA 8270B
129000	Pyrene	840	330	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	330	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	460	330	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85657-4

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970804-LD-38-SL0036(10-12), 08/04/97, 14:30, received 08/06/97

14/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	31.5	0.05	%	1	
57125	Total Cyanide	BDL	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	7.3	mg/kg	1	EPA 6010A
7440382	Total Arsenic	4.8	1.5	mg/kg	1	EPA 7060A
7440393	Total Barium	110	1.5	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.7	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.7	mg/kg	1	EPA 6010A
7440473	Total Chromium	11	1.5	mg/kg	1	EPA 6010A
7440508	Total Copper	9.3	2.9	mg/kg	1	EPA 6010A
7439921	Total Lead	6.0	3.6	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.36	mg/kg	1	EPA 7471
7440020	Total Nickel	11	2.9	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	5.8	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.5	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	5.8	mg/kg	1	EPA 7841
7440666	Total Zinc	96	2.9	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	73	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	73	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	73	ug/kg	1	EPA 8260A
71432	Benzene	BDL	7	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	7	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	7	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	15	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	7	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	7	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	7	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	7	ug/kg	1	EPA 8260A
75663	Chloroform	BDL	7	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	15	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	15	ug/kg	1	EPA 8260A



## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970804-LD-38-SL0036(10-12), 08/04/97, 14:30, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	7	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	15	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	73	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	73	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	7	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	73	ug/kg	1	EPA 8260A
100425	Styrene	BDL	7	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg	1	EPA 8260A
108883	Toluene	BDL	7	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	15	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	15	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg	1	EPA 8260A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	480	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	480	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	480	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	480	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	480	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2500	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2500	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	480	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	480	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	480	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	480	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2500	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	480	ug/kg	1	EPA 8270B
108952	Phenol	BDL	480	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0382

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970804-LD-38-SL0036(10-12), 08/04/97, 14:30, received 08/06/97

CAS #	Analyte	Result	Detection	Units	Dilution Factor	Analytical Method
			Limit			
95954	2,4,5-Trichlorophenol	BDL	480	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	480	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2500	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	480	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	480	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	480	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	480	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	480	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	480	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	480	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	480	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	480	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	480	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	480	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	480	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	480	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	480	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	480	ug/kg	1	EPA 8270B
587	2-Chloronaphthalene	BDL	480	ug/kg	1	EPA 8270B
105723	4-Chlorophenyl phenyl ether	BDL	480	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	480	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	480	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	480	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	480	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	480	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	480	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	480	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2500	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	480	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	480	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	480	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	480	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	480	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	480	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	480	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	480	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	480	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	480	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	480	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	480	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	480	ug/kg	1	EPA 8270B
576	2-Methylnaphthalene	BDL	480	ug/kg	1	EPA 8270B
1203	Naphthalene	BDL	480	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	480	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	480	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0383

## Sample Description

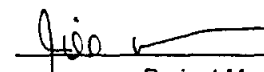
Sloss Industries

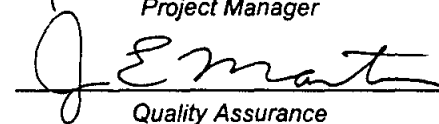
Soil, G &amp; M Project #TF0320.015, 970804-LD-38-SL0036(10-12), 08/04/97, 14:30, received 08/06/97

(E) 12/18/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	480	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	480	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	480	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	480	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	480	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	480	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	480	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	480	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85657-5

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970804-LD-38-SL0026(10-12), 08/04/97, 15:40, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	24.9	0.05	%	1	
57125	Total Cyanide	BDL	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.7	mg/kg	1	EPA 6010A
7440382	Total Arsenic	3.3	1.3	mg/kg	1	EPA 7060A
40393	Total Barium	110	1.3	mg/kg	1	EPA 6010A
7440417	Total Beryllium	1.9	0.7	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.7	mg/kg	1	EPA 6010A
7440473	Total Chromium	9.3	1.3	mg/kg	1	EPA 6010A
7440508	Total Copper	6.5	2.7	mg/kg	1	EPA 6010A
7439921	Total Lead	6.4	3.3	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.33	mg/kg	1	EPA 7471
7440020	Total Nickel	32	2.7	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	5.3	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.3	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	5.3	mg/kg	1	EPA 7841
7440666	Total Zinc	76	2.7	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	67	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	67	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	67	ug/kg	1	EPA 8260A
71432	Benzene	BDL	7	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	7	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	7	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	13	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	7	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	7	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	7	ug/kg	1	EPA 8260A
5003	Chloroethane	BDL	7	ug/kg	1	EPA 8260A
7663	Chloroform	BDL	7	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	13	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	13	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0385

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970804-LD-38-SL0026(10-12), 08/04/97, 15:40, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	7	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	13	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	67	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	67	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	7	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	67	ug/kg	1	EPA 8260A
100425	Styrene	BDL	7	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg	1	EPA 8260A
108883	Toluene	BDL	7	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	13	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	13	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	440	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	440	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	440	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	440	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	440	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	440	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	440	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	440	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	440	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2300	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	440	ug/kg	1	EPA 8270B
108952	Phenol	BDL	440	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0386

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970804-LD-38-SL0026(10-12), 08/04/97, 15:40, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	440	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	440	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2300	ug/kg	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	440	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	440	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	440	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	440	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	440	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	440	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	440	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	440	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	440	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	440	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	440	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	440	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	440	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	440	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	440	ug/kg	1	EPA 8270B
587	2-Chloronaphthalene	BDL	440	ug/kg	1	EPA 8270B
5723	4-Chlorophenyl phenyl ether	BDL	440	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	440	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	440	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	440	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	440	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	440	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	440	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	440	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2300	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	440	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	440	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	440	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	440	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	440	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	440	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	440	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	440	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	440	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	440	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	440	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	440	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	440	ug/kg	1	EPA 8270B
576	2-Methylnaphthalene	BDL	440	ug/kg	1	EPA 8270B
103	Naphthalene	BDL	440	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	440	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	440	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0387


## Sample Description

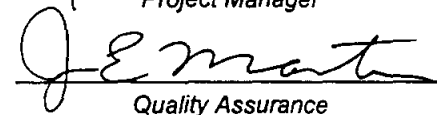
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970804-LD-38-SL0026(10-12), 08/04/97, 15:40, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	440	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	440	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	440	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	440	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	440	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	440	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	440	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	440	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

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## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85657-6

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970804-LD-38-SL0026(18-20), 08/04/97, 16:15, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Moisture	13.6	0.05	%	1	
	Total Cyanide	BDL	0.2	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	5.9	mg/kg	1	EPA 6010A
7440382	Total Arsenic	1.8	1.2	mg/kg	1	EPA 7060A
10393	Total Barium	99	1.2	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.6	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.6	mg/kg	1	EPA 6010A
7440473	Total Chromium	15	1.2	mg/kg	1	EPA 6010A
7440508	Total Copper	6.5	2.4	mg/kg	1	EPA 6010A
7439921	Total Lead	BDL	3.0	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.30	mg/kg	1	EPA 7471
7440020	Total Nickel	20	2.4	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.8	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.2	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.8	mg/kg	1	EPA 7841
7440666	Total Zinc	60	2.4	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	58	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	58	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	58	ug/kg	1	EPA 8260A
71432	Benzene	BDL	6	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	12	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
703	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
70663	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	12	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	12	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0389



## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970804-LD-38-SL0026(18-20), 08/04/97, 16:15, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	12	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	58	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	58	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	58	ug/kg	1	EPA 8260A
100425	Styrene	BDL	6	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	12	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	12	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	380	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	380	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	380	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	380	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	380	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2000	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2000	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	380	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	380	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	380	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	380	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2000	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	380	ug/kg	1	EPA 8270B
108952	Phenol	BDL	380	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0350

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## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970804-LD-38-SL0026(18-20), 08/04/97, 16:15, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	380	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	380	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2000	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	380	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	380	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	380	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	380	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	380	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	380	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	380	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	380	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	380	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	380	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	380	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	380	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	380	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	380	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	380	ug/kg	1	EPA 8270B
587	2-Chloronaphthalene	BDL	380	ug/kg	1	EPA 8270B
105723	4-Chlorophenyl phenyl ether	BDL	380	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	380	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	380	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	380	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	380	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	380	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	380	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	380	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2000	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	380	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	380	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	380	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	380	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	380	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	380	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	380	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	380	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	380	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	380	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	380	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	380	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	380	ug/kg	1	EPA 8270B
1576	2-Methylnaphthalene	BDL	380	ug/kg	1	EPA 8270B
203	Naphthalene	BDL	380	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	380	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	380	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0391

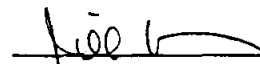
**Sample Description**

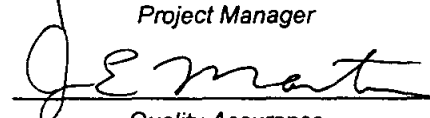
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970804-LD-38-SL0026(18-20), 08/04/97, 16:15, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	380	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	380	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	380	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	380	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	380	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	380	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	380	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	380	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85657-7

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970804-LD-38-SL9036, 08/04/97,, received 08/06/97

12/18/97  
Detection

CAS #	Analyte	Result	Limit	Units	Dilution Factor	Analytical Method
	Moisture	17.7	0.05	%	1	
57125	Total Cyanide	BDL	0.2	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.1	mg/kg	1	EPA 6010A
7440382	Total Arsenic	3.5	1.2	mg/kg	1	EPA 7060A
10393	Total Barium	140	1.2	mg/kg	1	EPA 6010A
40417	Total Beryllium	BDL	0.6	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.6	mg/kg	1	EPA 6010A
7440473	Total Chromium	7.9	1.2	mg/kg	1	EPA 6010A
7440508	Total Copper	21	2.4	mg/kg	1	EPA 6010A
7439921	Total Lead	16	3.0	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.30	mg/kg	1	EPA 7471
7440020	Total Nickel	7.2	2.4	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.9	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.2	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.9	mg/kg	1	EPA 7841
7440666	Total Zinc	57	2.4	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	61	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	61	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	61	ug/kg	1	EPA 8260A
71432	Benzene	BDL	6	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	12	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
11003	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
363	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	12	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	12	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0393

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970804-LD-38-SL9036, 08/04/97,, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	12	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	61	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	61	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	61	ug/kg	1	EPA 8260A
100425	Styrene	BDL	6	ug/kg	1	EPA 826C
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	12	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	12	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	400	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	400	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	400	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	400	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	400	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2100	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2100	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	400	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2100	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	400	ug/kg	1	EPA 8270B
108952	Phenol	BDL	400	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0394

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970804-LD-38-SL9036, 08/04/97,, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	400	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	400	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2100	ug/kg	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	400	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	400	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	400	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	400	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	400	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	400	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	400	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	400	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	400	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	400	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	400	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	400	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	400	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	400	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	400	ug/kg	1	EPA 8270B
187	2-Chloronaphthalene	BDL	400	ug/kg	1	EPA 8270B
105723	4-Chlorophenyl phenyl ether	BDL	400	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	400	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	400	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	400	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	400	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2100	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	400	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	400	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	400	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	400	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	400	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	400	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	400	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	400	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	400	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	400	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	400	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	400	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	400	ug/kg	1	EPA 8270B
576	2-Methylnaphthalene	BDL	400	ug/kg	1	EPA 8270B
1203	Naphthalene	BDL	400	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

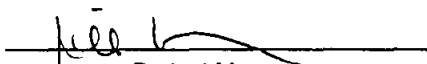
**Sample Description**

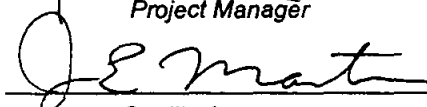
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970804-LD-38-SL9036, 08/04/97,, received 08/06/97

CAS #	Analyte	Result	Detection Limit		Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	400		ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	400		ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	400		ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	400		ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	400		ug/kg	1	EPA 8270B
129000	Pyrene	BDL	400		ug/kg	1	EPA 8270B
110861	Pyridine	BDL	400		ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	400		ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85657-8

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970804-LD-38-SL9026, 08/04/97,, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	24.9	0.05	%	1	
57125	Total Cyanide	BDL	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.7	mg/kg	1	EPA 6010A
7440382	Total Arsenic	3.5	1.3	mg/kg	1	EPA 7060A
7440393	Total Barium	110	1.3	mg/kg	1	EPA 6010A
7440417	Total Beryllium	1.6	0.7	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.7	mg/kg	1	EPA 6010A
7440473	Total Chromium	8.5	1.3	mg/kg	1	EPA 6010A
7440508	Total Copper	15	2.7	mg/kg	1	EPA 6010A
7439921	Total Lead	5.5	3.3	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.33	mg/kg	1	EPA 7471
7440020	Total Nickel	29	2.7	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	5.3	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.3	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	5.7	mg/kg	1	EPA 7841
7440666	Total Zinc	51	2.7	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	67	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	67	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	67	ug/kg	1	EPA 8260A
71432	Benzene	BDL	7	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	7	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	7	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	13	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	7	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	7	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	7	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	7	ug/kg	1	EPA 8260A
75063	Chloroform	BDL	7	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	13	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	13	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0397



## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970804-LD-38-SL9026, 08/04/97,, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	7	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	13	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	67	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	67	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	7	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	67	ug/kg	1	EPA 8260A
100425	Styrene	BDL	7	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg	1	EPA 8260A
108883	Toluene	8	7	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	13	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	13	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	440	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	440	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	440	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	440	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	440	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	440	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	440	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	440	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	440	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2300	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	440	ug/kg	1	EPA 8270B
108952	Phenol	BDL	440	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970804-LD-38-SL9026, 08/04/97,, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	440	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	440	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2300	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	440	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	440	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	440	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	440	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	440	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	440	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	440	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	440	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	440	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	440	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	440	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	440	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	440	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	440	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	440	ug/kg	1	EPA 8270B
87	2-Chloronaphthalene	BDL	440	ug/kg	1	EPA 8270B
5723	4-Chlorophenyl phenyl ether	BDL	440	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	440	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	440	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	440	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	440	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	440	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	440	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	440	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2300	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	440	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	440	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	440	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	440	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	440	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	440	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	440	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	440	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	440	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	440	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	440	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	440	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	440	ug/kg	1	EPA 8270B
576	2-Methylnaphthalene	BDL	440	ug/kg	1	EPA 8270B
203	Naphthalene	BDL	440	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	440	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	440	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0399


## Sample Description

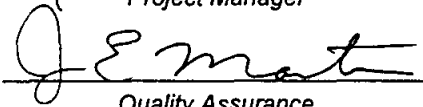
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970804-LD-38-SL9026, 08/04/97,, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	440	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	440	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	440	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	440	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	440	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	440	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	440	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	440	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85657-9

September 13, 1997

### Sample Description

Sloss Industries

Water, G & M Project #TF0320.015, 970805-LD-39-FB0001, 08/05/97, 16:40, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	BDL	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
7563	Chloroform	BDL	5	ug/l	1	EPA 8260A
373	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0401

## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970805-LD-39-FB0001, 08/05/97, 16:40, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
100027	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

0402

## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970805-LD-39-FB0001, 08/05/97, 16:40, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
75723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
8019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
1203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

0403

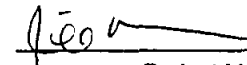
**Sample Description**


Sloss Industries

Water, G &amp; M Project #TF0320.015, 970805-LD-39-FB0001, 08/05/97, 16:40, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85657-10

September 13, 1997

### Sample Description

Sloss Industries

Water, G & M Project #TF0320.015, 970805-LD-39-EB0001, 08/05/97, 16:55, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	BDL	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
7663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0405



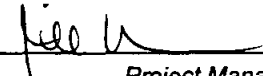
**Sample Description**

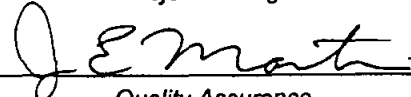
Sloss Industries

Water, G &amp; M Project #TF0320.015, 970805-LD-39-EB0001, 08/05/97, 16:55, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A

Respectfully submitted,

  
 Project Manager

  
 Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85657-11

September 13, 1997

### Sample Description

Sloss Industries

Water, G & M Project #TF0320.015, 970805-LD-23-FB0001, 08/05/97, 16:05, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
<b>Priority Pollutant Metals</b>						
<b>Metals</b>						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	BDL	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
<b>Volatile Organics (EPA 8260A)</b>						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
75663	Chloroform	BDL	5	ug/l	1	EPA 8260A
7573	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0407

## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970805-LD-23-FB0001, 08/05/97, 16:05, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
100027	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970805-LD-23-FB0001, 08/05/97, 16:05, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
75723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
18019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
1203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
1744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

0409

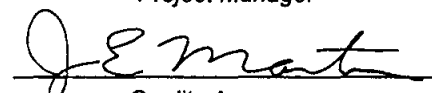
**Sample Description**

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970805-LD-23-FB0001, 08/05/97, 16:05, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
\_\_\_\_\_  
Project Manager  
\_\_\_\_\_  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85657-12

September 13, 1997

### Sample Description

Sloss Industries

Water, G & M Project #TF0320.015, 970805-LD-23-EB0001, 08/05/97, 16:20, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	BDL	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
0439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
73	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0411

**Sample Description**

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970805-LD-23-EB0001, 08/05/97, 16:20, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 826
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
100027	4-Nitrophenol	BDL	50	ug/l	1	EPA 827
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970805-LD-23-EB0001, 08/05/97, 16:20, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
105723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
3019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
1203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit




## Sample Description

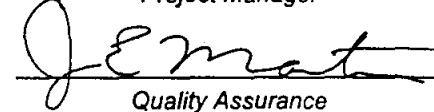
Sloss Industries

Water, G &amp; M Project #TF0320.015, 970805-LD-23-EB0001, 08/05/97, 16:20, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 85657-13

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970805-LD-38-SL0027(11-13), 08/05/97, 8:00, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Moisture	17.4	0.05	%	1	
	Total Cyanide	BDL	0.2	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.1	mg/kg	1	EPA 6010A
7440382	Total Arsenic	4.1	1.2	mg/kg	1	EPA 7060A
7440393	Total Barium	8.6	1.2	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.6	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.6	mg/kg	1	EPA 6010A
7440473	Total Chromium	15	1.2	mg/kg	1	EPA 6010A
7440508	Total Copper	BDL	2.4	mg/kg	1	EPA 6010A
7439921	Total Lead	BDL	3.0	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.30	mg/kg	1	EPA 7471
7440020	Total Nickel	BDL	2.4	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.8	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.2	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.8	mg/kg	1	EPA 7841
7440666	Total Zinc	23	2.4	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	61	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	61	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	61	ug/kg	1	EPA 8260A
71432	Benzene	BDL	6	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	12	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
63	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	12	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	12	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0415

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-38-SL0027(11-13), 08/05/97, 8:00, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	12	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	61	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	61	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	61	ug/kg	1	EPA 8260A
100425	Styrene	BDL	6	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	12	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	12	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	400	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	400	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	400	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	400	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	400	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2000	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2000	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	400	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2000	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	400	ug/kg	1	EPA 8270B
108952	Phenol	BDL	400	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0416

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-38-SL0027(11-13), 08/05/97, 8:00, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	400	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	400	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2000	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	400	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	400	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	400	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	400	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	400	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	400	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	400	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	400	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	400	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	400	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	400	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	400	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	400	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	400	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	400	ug/kg	1	EPA 8270B
587	2-Chloronaphthalene	BDL	400	ug/kg	1	EPA 8270B
105723	4-Chlorophenyl phenyl ether	BDL	400	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	400	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	400	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	400	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	400	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2000	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	400	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	400	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	400	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	400	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	400	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	400	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	400	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	400	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	400	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	400	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	400	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	400	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	400	ug/kg	1	EPA 8270B
576	2-Methylnaphthalene	BDL	400	ug/kg	1	EPA 8270B
103	Naphthalene	BDL	400	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0417

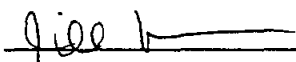
**Sample Description**


Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-38-SL0027(11-13), 08/05/97, 8:00, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	400	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	400	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	400	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	400	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	400	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	400	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	400	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 85657-14

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970805-LD-38-SL0027(22-24), 08/05/97, 8:15, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Moisture	34.3	0.05	%	1	
	Total Cyanide	BDL	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	7.6	mg/kg	1	EPA 6010A
7440382	Total Arsenic	2.3	1.5	mg/kg	1	EPA 7060A
7440393	Total Barium	17	1.5	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.8	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.8	mg/kg	1	EPA 6010A
7440473	Total Chromium	2.4	1.5	mg/kg	1	EPA 6010A
7440508	Total Copper	BDL	3.0	mg/kg	1	EPA 6010A
7439921	Total Lead	BDL	3.8	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.38	mg/kg	1	EPA 7471
7440020	Total Nickel	4.4	3.0	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	6.1	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.5	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	6.1	mg/kg	1	EPA 7841
7440666	Total Zinc	18	3.0	mg/kg	1	EPA 6010A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	500	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	500	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	500	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	500	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	500	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2600	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2600	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	500	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	500	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	500	ug/kg	1	EPA 8270B
90755	2-Nitrophenol	BDL	500	ug/kg	1	EPA 8270B
90727	4-Nitrophenol	BDL	2600	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	500	ug/kg	1	EPA 8270B
108952	Phenol	BDL	500	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0419

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-38-SL0027(22-24), 08/05/97, 8:15, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	500	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	500	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2600	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	500	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	500	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	500	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	500	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	500	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	500	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	500	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	500	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	500	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	500	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	500	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	500	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	500	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	500	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	500	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	500	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	500	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	500	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	500	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	500	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	500	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	500	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	500	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	500	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2600	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	500	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	500	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	500	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	500	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	500	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	500	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	500	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	500	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	500	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	500	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	500	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	500	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	500	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	500	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	500	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	500	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	500	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0420

Page 2 of 2

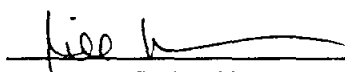
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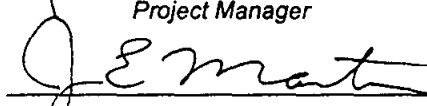
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-38-SL0027(22-24), 08/05/97, 8:15, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	500	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	500	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	500	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	500	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	500	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	500	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	500	ug/kg	.1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	500	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance





# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85657-15

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970805-LD-39-SL0034(10-12), 08/05/97, 12:00, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	17.0	0.05	%	1	
57125	Total Cyanide	0.7	0.2	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.0	mg/kg	1	EPA 6010A
7440382	Total Arsenic	5.2	1.2	mg/kg	1	EPA 7060A
7440393	Total Barium	180	1.2	mg/kg	1	EPA 6010
7440417	Total Beryllium	BDL	0.6	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.6	mg/kg	1	EPA 6010A
7440473	Total Chromium	13	1.2	mg/kg	1	EPA 6010A
7440508	Total Copper	BDL	2.4	mg/kg	1	EPA 6010A
7439921	Total Lead	10	3.0	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.30	mg/kg	1	EPA 7471
7440020	Total Nickel	6.0	2.4	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.8	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.2	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.8	mg/kg	1	EPA 7841
7440666	Total Zinc	46	2.4	mg/kg	1	EPA 6010A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	400	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	400	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	400	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	400	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	400	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2000	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2000	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	400	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2000	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	400	ug/kg	1	EPA 8270B
108952	Phenol	BDL	400	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0422

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-39-SL0034(10-12), 08/05/97, 12:00, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	400	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	400	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2000	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	400	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	400	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	400	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	400	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	400	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	400	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	400	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	400	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	400	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	400	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	400	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	400	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	400	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	400	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	400	ug/kg	1	EPA 8270B
587	2-Chloronaphthalene	BDL	400	ug/kg	1	EPA 8270B
5723	4-Chlorophenyl phenyl ether	BDL	400	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	400	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	400	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	400	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	400	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2000	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	400	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	400	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	400	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	400	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	400	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	400	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	400	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	400	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	400	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	400	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	400	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	400	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	400	ug/kg	1	EPA 8270B
576	2-Methylnaphthalene	BDL	400	ug/kg	1	EPA 8270B
3	Naphthalene	BDL	400	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0423

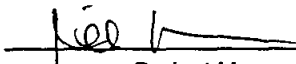
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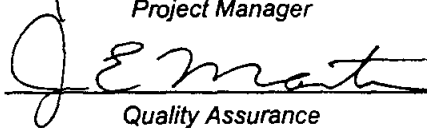
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-39-SL0034(10-12), 08/05/97, 12:00, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	400	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	400	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	400	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	400	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	400	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	400	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	400	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance

**Laboratory Report**

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: **85657-16**

September 13, 1997

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-23-SL0025(19-21), 08/05/97, 13:45, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Moisture	22.7	0.05	%	1	
	Total Cyanide	BDL	0.3	mg/kg	1	EPA 9010A
<b>Priority Pollutant Metals</b>						
<b>Metals</b>						
7440360	Total Antimony	BDL	6.3	mg/kg	1	EPA 6010A
7440382	Total Arsenic	3.8	1.3	mg/kg	1	EPA 7060A
7440393	Total Barium	180	1.3	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.6	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.6	mg/kg	1	EPA 6010A
7440473	Total Chromium	15	1.3	mg/kg	1	EPA 6010A
7440508	Total Copper	BDL	2.5	mg/kg	1	EPA 6010A
7439921	Total Lead	BDL	3.2	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.32	mg/kg	1	EPA 7471
7440020	Total Nickel	18	2.5	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	5.0	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.3	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	5.0	mg/kg	1	EPA 7841
7440666	Total Zinc	47	2.5	mg/kg	1	EPA 6010A
<b>Volatile Organics (EPA 8260A)</b>						
67641	Acetone	110	65	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	65	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	65	ug/kg	1	EPA 8260A
71432	Benzene	BDL	6	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	13	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
75063	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	13	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	13	ug/kg	1	EPA 8260A

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-23-SL0025(19-21), 08/05/97, 13:45, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	13	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	65	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	65	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	65	ug/kg	1	EPA 8260A
100425	Styrene	BDL	6	ug/kg	1	EPA 826
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	13	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	13	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	430	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	430	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	430	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	430	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	430	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2200	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2200	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	430	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	430	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	430	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	430	ug/kg	1	EPA 827
100027	4-Nitrophenol	BDL	2200	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	430	ug/kg	1	EPA 8270B
108952	Phenol	BDL	430	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0426

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-23-SL0025(19-21), 08/05/97, 13:45, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	430	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	430	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2200	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	430	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	430	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	430	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	430	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	430	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	430	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	430	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	430	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	430	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	430	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	430	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	430	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	430	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	430	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	430	ug/kg	1	EPA 8270B
587	2-Chloronaphthalene	BDL	430	ug/kg	1	EPA 8270B
J5723	4-Chlorophenyl phenyl ether	BDL	430	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	430	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	430	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	430	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	430	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	430	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	430	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	430	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2200	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	430	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	430	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	430	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	430	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	430	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	430	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	430	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	430	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	430	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	430	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	430	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	430	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	430	ug/kg	1	EPA 8270B
576	2-Methylnaphthalene	BDL	430	ug/kg	1	EPA 8270B
103	Naphthalene	BDL	430	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	430	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	430	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0427


**Sample Description**

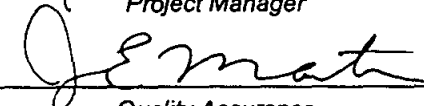
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-23-SL0025(19-21), 08/05/97, 13:45, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	430	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	430	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	430	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	430	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	430	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	430	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	430	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	430	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85657-17

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970805-LD-23-SL0024(7-9), 08/05/97, 15:15, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	18.4	0.05	%	1	
57125	Total Cyanide	BDL	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.1	mg/kg	1	EPA 6010A
7440382	Total Arsenic	13	1.2	mg/kg	1	EPA 7060A
7440393	Total Barium	43	1.2	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.6	mg/kg	1	EPA 6010A
7440439	Total Cadmium	2.5	0.6	mg/kg	1	EPA 6010A
7440473	Total Chromium	7.0	1.2	mg/kg	1	EPA 6010A
7440508	Total Copper	5.0	2.5	mg/kg	1	EPA 6010A
7439921	Total Lead	4.4	3.1	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.31	mg/kg	1	EPA 7471
7440020	Total Nickel	45	2.5	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.9	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.2	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.9	mg/kg	1	EPA 7841
7440666	Total Zinc	83	2.5	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	61	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	61	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	61	ug/kg	1	EPA 8260A
71432	Benzene	BDL	6	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	12	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
663	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	12	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	12	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0429



## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-23-SL0024(7-9), 08/05/97, 15:15, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	12	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	62	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	62	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	62	ug/kg	1	EPA 8260A
100425	Styrene	BDL	6	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	12	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	12	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	400	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	400	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	400	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	400	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	400	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2100	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2100	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	400	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2100	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	400	ug/kg	1	EPA 8270B
108952	Phenol	BDL	400	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-23-SL0024(7-9), 08/05/97, 15:15, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	400	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	400	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2100	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	400	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	400	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	400	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	400	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	400	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	400	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	400	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	400	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	400	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	400	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	400	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	400	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	400	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	400	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	400	ug/kg	1	EPA 8270B
587	2-Chloronaphthalene	BDL	400	ug/kg	1	EPA 8270B
5723	4-Chlorophenyl phenyl ether	BDL	400	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	400	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	400	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	400	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	400	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2100	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	400	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	400	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	400	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	400	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	400	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	400	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	400	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	400	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	400	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	400	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	400	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	400	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	400	ug/kg	1	EPA 8270B
576	2-Methylnaphthalene	BDL	400	ug/kg	1	EPA 8270B
203	Naphthalene	BDL	400	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0431


**Sample Description**

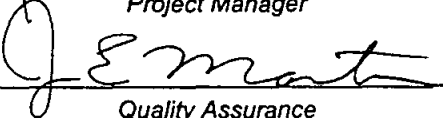
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-23-SL0024(7-9), 08/05/97, 15:15, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	400	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	400	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	400	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	400	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	400	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	400	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	400	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85657-18

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970805-LD-23-SL0024(7-9)MS, 08/05/97, 15:15, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	0.1	0.2	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	5.0	mg/kg	1	EPA 6010A
7440382	Total Arsenic	76	1.0	mg/kg	1	EPA 7060A
7440393	Total Barium	470	1.0	mg/kg	1	EPA 6010A
7440417	Total Beryllium	37	0.5	mg/kg	1	EPA 6010A
7440439	Total Cadmium	7.4	0.5	mg/kg	1	EPA 6010A
7440473	Total Chromium	62	1.0	mg/kg	1	EPA 6010A
7440508	Total Copper	41	2.0	mg/kg	1	EPA 6010A
7439921	Total Lead	190	2.5	mg/kg	1	EPA 6010A
7439976	Total Mercury	1.96	0.25	mg/kg	1	EPA 7471
7440020	Total Nickel	140	2.0	mg/kg	1	EPA 6010A
7782492	Total Selenium	120	4.0	mg/kg	1	EPA 7740
7440224	Total Silver	47	1.0	mg/kg	1	EPA 6010A
7440280	Total Thallium	204	4.0	mg/kg	1	EPA 7841
7440666	Total Zinc	190	2.0	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	50	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/kg	1	EPA 8260A
71432	Benzene	54	5	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	5	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/kg	1	EPA 8260A
108907	Chlorobenzene	52	5	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/kg	1	EPA 8260A
75663	Chloroform	BDL	5	ug/kg	1	EPA 8260A
7573	Chloromethane	BDL	10	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/kg	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

0433

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-23-SL0024(7-9)MS, 08/05/97, 15:15, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	46	5	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/kg	1	EPA 8260A
100425	Styrene	BDL	5	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/kg	1	EPA 8260A
108883	Toluene	54	5	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79016	Trichloroethene	47	5	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	5	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	1700	330	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	1800	330	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	330	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	330	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	330	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	1700	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	1700	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	330	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	1400	1700	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	1300	330	ug/kg	1	EPA 8270B
108952	Phenol	1800	330	ug/kg	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	330	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-23-SL0024(7-9)MS, 08/05/97, 15:15, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	330	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	1700	ug/kg	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	1600	330	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	330	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	330	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	330	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	330	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	330	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	330	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	330	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	330	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	330	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	330	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	330	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	330	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	330	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	330	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	330	ug/kg	1	EPA 8270B
15723	4-Chlorophenyl phenyl ether	BDL	330	ug/kg	1	EPA 8270B
18019	Chrysene	BDL	330	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	330	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	330	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	330	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	700	330	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	1700	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	330	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	330	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	920	330	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	330	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	330	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	330	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	330	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	330	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	330	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	330	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	330	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	330	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	330	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	330	ug/kg	1	EPA 8270B
203	Naphthalene	BDL	330	ug/kg	1	EPA 8270B
744	2-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B
100016	4-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

0435

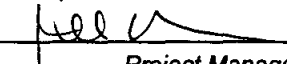
**Sample Description**

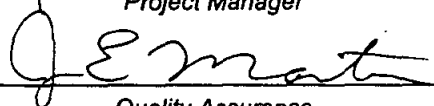
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-23-SL0024(7-9)MS, 08/05/97, 15:15, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	330	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	330	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	800	330	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	330	ug/kg	1	EPA 8270B
129000	Pyrene	1100	330	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	330	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	800	330	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance

**Laboratory Report**

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85657-19

September 13, 1997

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-23-SL0024(14-16), 08/05/97, 15:50, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Moisture	30.5	0.05	%	1	
	Total Cyanide	BDL	0.3	mg/kg	1	EPA 9010A
<b>Priority Pollutant Metals</b>						
<b>Metals</b>						
7440360	Total Antimony	BDL	7.2	mg/kg	1	EPA 6010A
7440382	Total Arsenic	30	1.4	mg/kg	1	EPA 7060A
7440393	Total Barium	53	1.4	mg/kg	1	EPA 6010A
7440417	Total Beryllium	0.7	0.7	mg/kg	1	EPA 6010A
7440439	Total Cadmium	2.4	0.7	mg/kg	1	EPA 6010A
7440473	Total Chromium	19	1.4	mg/kg	1	EPA 6010A
7440508	Total Copper	22	2.9	mg/kg	1	EPA 6010A
7439921	Total Lead	19	3.6	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.36	mg/kg	1	EPA 7471
7440020	Total Nickel	66	2.9	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	5.8	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.4	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	5.8	mg/kg	1	EPA 7841
7440666	Total Zinc	430	2.9	mg/kg	1	EPA 6010A
<b>Volatile Organics (EPA 8260A)</b>						
67641	Acetone	BDL	72	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	72	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	72	ug/kg	1	EPA 8260A
71432	Benzene	BDL	7	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	7	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	7	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	14	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	7	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	7	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	7	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	7	ug/kg	1	EPA 8260A
7563	Chloroform	BDL	7	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	14	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	14	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis



**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-23-SL0024(14-16), 08/05/97, 15:50, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	7	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	14	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	72	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	72	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	7	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	72	ug/kg	1	EPA 8260A
100425	Styrene	BDL	7	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg	1	EPA 8260A
108883	Toluene	BDL	7	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	14	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	14	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	470	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	470	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	470	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	470	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	470	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2400	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2400	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	470	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	470	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	470	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	470	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2400	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	470	ug/kg	1	EPA 8270B
108952	Phenol	BDL	470	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-23-SL0024(14-16), 08/05/97, 15:50, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	470	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	470	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2400	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	470	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	470	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	470	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	470	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	470	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	470	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	470	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	470	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	470	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	470	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	470	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	470	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	470	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	470	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	470	ug/kg	1	EPA 8270B
587	2-Chloronaphthalene	BDL	470	ug/kg	1	EPA 8270B
1005723	4-Chlorophenyl phenyl ether	BDL	470	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	470	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	470	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	470	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	470	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	470	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	470	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	470	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2400	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	470	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	470	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	470	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	470	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	470	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	470	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	470	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	470	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	470	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	470	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	470	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	470	ug/kg	1	EPA 8270B
78591	Isophorone	BQL	470	ug/kg	1	EPA 8270B
1576	2-Methylnaphthalene	BDL	470	ug/kg	1	EPA 8270B
1203	Naphthalene	BDL	470	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	470	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	470	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0439


## Sample Description

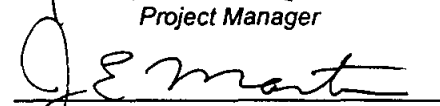
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-23-SL0024(14-16), 08/05/97, 15:50, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	470	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	470	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	470	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	470	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	470	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	470	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	470	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	470	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85657-20

September 13, 1997

### Sample Description

Sloss Industries  
Aqueous Batch Blank,, Batch #31795,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
24521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
185	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
100027	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
338329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B


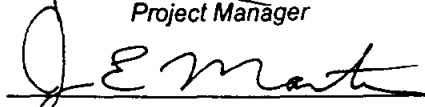
BDL - Below Detection Limit

0411

**Sample Description**  
Sloss Industries  
Aqueous Batch Blank,, Batch #31795,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
 Project Manager  
  
 Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85657-21

September 13, 1997

### Sample Description

Sloss Industries

Soil/Sediment Batch Blank,, Batch #31934,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	330	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	330	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	330	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	330	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	330	ug/kg	1	EPA 8270B
14521	2-Methyl-4,6-dinitrophenol	BDL	1700	ug/kg	1	EPA 8270B
285	2,4-Dinitrophenol	BDL	1700	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	330	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	1700	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	330	ug/kg	1	EPA 8270B
108952	Phenol	BDL	330	ug/kg	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	330	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	330	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	1700	ug/kg	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	330	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	330	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	330	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	330	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	330	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	330	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	330	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	330	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	330	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	330	ug/kg	1	EPA 8270B
11444	Bis(2-chloroethyl)ether	BDL	330	ug/kg	1	EPA 8270B
338329	Bis(2-chloroisopropyl)ether	BDL	330	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	330	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	330	ug/kg	1	EPA 8270B


BDL - Below Detection Limit

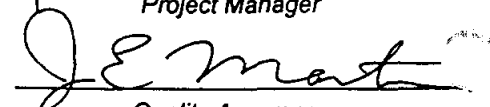
0413

**Sample Description**  
 Sloss Industries  
 Soil/Sediment Batch Blank,, Batch #31934,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106478	p-Chloroaniline	BDL	330	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	330	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	330	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	330	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	330	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	330	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	330	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	1700	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	330	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	330	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	330	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	330	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	330	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	330	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	330	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	330	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	330	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	330	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	330	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	330	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	330	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	330	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	330	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B
100016	4-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	330	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	330	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	330	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	330	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	330	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	330	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	330	ug/kg	1	EPA 8270B

Respectfully submitted,

  
 Project Manager

  
 Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85657-22

September 13, 1997

### Sample Description

Sloss Industries  
Aqueous Batch Blank,, Batch #31956,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
752	Bromoform	BDL	5	ug/l	1	EPA 8260A
75239	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
1786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit


0445




**Sample Description**  
Sloss Industries  
Aqueous Batch Blank,, Batch #31956,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85657-23

September 13, 1997

### Sample Description

Sloss Industries

Soil/Sediment Batch Blank,, Batch #31980,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	50	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/kg	1	EPA 8260A
71432	Benzene	BDL	5	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	5	ug/kg	1	EPA 8260A
75839	Bromomethane	BDL	10	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	5	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/kg	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/kg	1	EPA 8260A
751786	2-Hexanone	BDL	50	ug/kg	1	EPA 8260A
75884	Iodomethane	BDL	5	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/kg	1	EPA 8260A

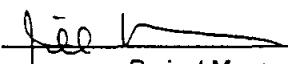
BDL - Below Detection Limit

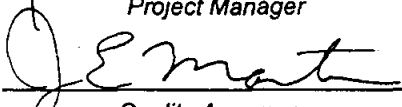
0447

**Sample Description**  
Sloss Industries  
Soil/Sediment Batch Blank,, Batch #31980,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/kg	1	EPA 8260A
100425	Styrene	BDL	5	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/kg	1	EPA 8260A
108883	Toluene	BDL	5	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	5	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	5	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/kg	1	EPA 8260A

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 85657-24

September 13, 1997

### Sample Description

Sloss Industries  
Soil/Sediment Batch Blank,, Batch #31992,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	50	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/kg	1	EPA 8260A
71432	Benzene	BDL	5	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	5	ug/kg	1	EPA 8260A
75283	Bromomethane	BDL	10	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	5	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/kg	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/kg	1	EPA 8260A
71786	2-Hexanone	BDL	50	ug/kg	1	EPA 8260A
7884	Iodomethane	BDL	5	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/kg	1	EPA 8260A

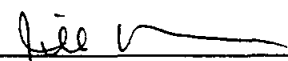
BDL - Below Detection Limit

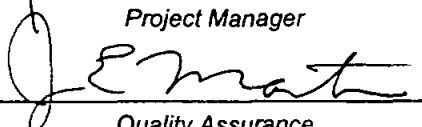
0419

**Sample Description**  
Sloss Industries  
Soil/Sediment Batch Blank,, Batch #31992,,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/kg	1	EPA 8260A
100425	Styrene	BDL	5	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/kg	1	EPA 8260A
108883	Toluene	BDL	5	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	5	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	5	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/kg	1	EPA 8260A

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85657-25

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970804-LD-38-SL0036(5-7)MSD, 08/04/97, 14:00, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	0.2	0.2	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	200	5.0	mg/kg	1	EPA 6010A
7440382	Total Arsenic	142	1.0	mg/kg	1	EPA 7060A
7440393	Total Barium	950	1.0	mg/kg	1	EPA 6010A
7440417	Total Beryllium	120	0.5	mg/kg	1	EPA 6010A
7440439	Total Cadmium	42	0.5	mg/kg	1	EPA 6010A
7440473	Total Chromium	100	1.0	mg/kg	1	EPA 6010A
7440508	Total Copper	130	2.0	mg/kg	1	EPA 6010A
7439921	Total Lead	450	2.5	mg/kg	1	EPA 6010A
7439976	Total Mercury	1.82	0.25	mg/kg	1	EPA 7471
7440020	Total Nickel	210	2.0	mg/kg	1	EPA 6010A
7782492	Total Selenium	136	4.0	mg/kg	1	EPA 7740
7440224	Total Silver	38	1.0	mg/kg	1	EPA 6010A
7440280	Total Thallium	172	4.0	mg/kg	1	EPA 7841
7440666	Total Zinc	250	2.0	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	50	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/kg	1	EPA 8260A
71432	Benzene	55	5	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	5	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/kg	1	EPA 8260A
108907	Chlorobenzene	50	5	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/kg	1	EPA 8260A
7663	Chloroform	BDL	5	ug/kg	1	EPA 8260A
7873	Chloromethane	BDL	10	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/kg	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

0451

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970804-LD-38-SL0036(5-7)MSD, 08/04/97, 14:00, received 08/06/97

(K) 12/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	47	5	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/kg	1	EPA 8260A
100425	Styrene	BDL	5	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/kg	1	EPA 8260
127184	Tetrachloroethene	BDL	5	ug/kg	1	EPA 8260A
108883	Toluene	57	5	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79016	Trichloroethene	45	5	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	5	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	2000	330	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	2050	330	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	330	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	330	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	330	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	1700	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	1700	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	330	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	1900	1700	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	1600	330	ug/kg	1	EPA 8270B
108952	Phenol	2060	330	ug/kg	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	330	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

0452

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970804-LD-36-SL0036(5-7)MSD, 08/04/97, 14:00, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	330	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	1700	ug/kg	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	1700	330	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	330	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	330	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	330	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	330	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	330	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	330	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	330	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	330	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	330	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	330	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	330	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	330	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	330	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	330	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	330	ug/kg	1	EPA 8270B
775723	4-Chlorophenyl phenyl ether	BDL	330	ug/kg	1	EPA 8270B
1019	Chrysene	BDL	330	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	330	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	330	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	330	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	800	330	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	1700	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	330	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	330	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	1100	330	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	330	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	330	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	330	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	330	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	330	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	330	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	330	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	330	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	330	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	330	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	330	ug/kg	1	EPA 8270B
1203	Naphthalene	BDL	330	ug/kg	1	EPA 8270B
44	2-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B
100016	4-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B

BDL - Below Detection Limit



## Sample Description


Sloss Industries

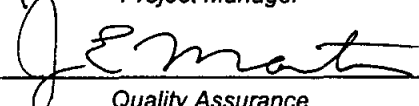
Soil, G &amp; M Project #TF0320.015, 970804-LD-38-SL0036(5-7)MSD, 08/04/97, 14:00, received 08/06/97

9 12/19/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	330	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	330	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	940	330	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	330	ug/kg	1	EPA 8270B
129000	Pyrene	1300	330	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	330	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	900	330	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance

**Laboratory Report**

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 85657-26

September 13, 1997

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-23-SL0024(7-9)MSD, 08/05/97, 15:15, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	0.2	0.2	mg/kg	1	EPA 9010A
<b>Priority Pollutant Metals</b>						
<b>Metals</b>						
7440360	Total Antimony	BDL	5.0	mg/kg	1	EPA 6010A
7440382	Total Arsenic	110	1.0	mg/kg	1	EPA 7060A
7440393	Total Barium	460	1.0	mg/kg	1	EPA 6010A
7440417	Total Beryllium	38	0.5	mg/kg	1	EPA 6010A
7440439	Total Cadmium	5.8	0.5	mg/kg	1	EPA 6010A
7440473	Total Chromium	50	1.0	mg/kg	1	EPA 6010A
7440508	Total Copper	37	2.0	mg/kg	1	EPA 6010A
7439921	Total Lead	200	2.5	mg/kg	1	EPA 6010A
7439976	Total Mercury	1.78	0.25	mg/kg	1	EPA 7471
7440020	Total Nickel	140	2.0	mg/kg	1	EPA 6010A
7782492	Total Selenium	204	4.0	mg/kg	1	EPA 7740
7440224	Total Silver	32	1.0	mg/kg	1	EPA 6010A
7440280	Total Thallium	180	4.0	mg/kg	1	EPA 7841
7440666	Total Zinc	180	2.0	mg/kg	1	EPA 6010A
<b>Volatile Organics (EPA 8260A)</b>						
67641	Acetone	BDL	50	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	50	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/kg	1	EPA 8260A
71432	Benzene	55	5	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	5	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/kg	1	EPA 8260A
108907	Chlorobenzene	52	5	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/kg	1	EPA 8260A
75663	Chloroform	BDL	5	ug/kg	1	EPA 8260A
7573	Chloromethane	BDL	10	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/kg	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/kg	1	EPA 8260A

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-23-SL0024(7-9)MSD, 08/05/97, 15:15, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	51	5	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/kg	1	EPA 8260A
100425	Styrene	BDL	5	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/kg	1	EPA 826C
127184	Tetrachloroethene	BDL	5	ug/kg	1	EPA 8260A
108883	Toluene	56	5	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79016	Trichloroethene	47	5	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	5	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	1700	330	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	1700	330	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	330	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	330	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	330	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	1700	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	1700	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	330	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	1600	1700	ug/kg	1	EPA 8270
87865	Pentachlorophenol	1400	330	ug/kg	1	EPA 8270b
108952	Phenol	1700	330	ug/kg	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	330	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

0456

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-23-SL0024(7-9)MSD, 08/05/97, 15:15, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	330	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	1700	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	1500	330	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	330	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	330	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	330	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	330	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	330	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	330	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	330	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	330	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	330	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	330	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	330	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	330	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	330	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	330	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	330	ug/kg	1	EPA 8270B
75723	4-Chlorophenyl phenyl ether	BDL	330	ug/kg	1	EPA 8270B
18019	Chrysene	BDL	330	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	330	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	330	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	330	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	670	330	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	1700	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	330	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	330	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	1040	330	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	330	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	330	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	330	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	330	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	330	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	330	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	330	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	330	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	330	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	330	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	330	ug/kg	1	EPA 8270B
203	Naphthalene	BDL	330	ug/kg	1	EPA 8270B
744	2-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B
100016	4-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

0457

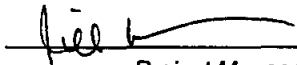
**Sample Description**

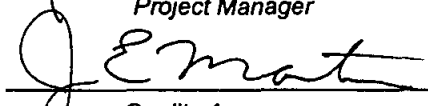
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970805-LD-23-SL0024(7-9)MSD, 08/05/97, 15:15, received 08/06/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	330	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	330	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	790	330	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	330	ug/kg	1	EPA 8270B
129000	Pyrene	1300	330	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	330	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	750	330	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance

Analytical Services Inc. Batch QC  
 For Report Number :85657  
 Base Neutrals / Acids

Matrix : Aqueous

Batch # 31795

Method : EPA 8270

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
Phenol	36	32	13	12 - 89	0 - 42
2-Chlorophenol	78	72	8	27 - 123	0 - 40
1,4-Dichlorobenzene	39	38	2	36 - 97	0 - 28
N-Nitrosodipropylamine	69	74	6	41 - 116	0 - 38
1,2,4-Trichlorobenzene	46	46	1	44 - 142	0 - 28
4-Chloro-3-methylphenol	78	75	4	23 - 97	0 - 42
Acenaphthene	74	77	4	46 - 118	0 - 31
2,4-Dinitrotoluene	75	78	4	24 - 96	0 - 38
4-Nitrophenol	27	27	2	10 - 80	0 - 50
Pentachlorophenol	73	76	4	9 - 103	0 - 50
Pyrene	87	86	2	26 - 127	0 - 31

^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
Phenol	23	34	41	12 - 89	0 - 42
2-Chlorophenol	31	63	70	27 - 123	0 - 40
1,4-Dichlorobenzene	36	35	3	36 - 97	0 - 28
N-Nitrosodipropylamine	70	68	2	41 - 116	0 - 38
1,2,4-Trichlorobenzene	46	44	4	44 - 142	0 - 28
4-Chloro-3-methylphenol	46	67	37	23 - 97	0 - 42
Acenaphthene	76	71	8	46 - 118	0 - 31
2,4-Dinitrotoluene	60	77	26	24 - 96	0 - 38
4-Nitrophenol	2	39	178	10 - 80	0 - 50
Pentachlorophenol	0	53	NC	9 - 103	0 - 50
Pyrene	76	75	1	26 - 127	0 - 31

^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE

NC = Not Calculated

## Analytical Services Inc. Batch QC

Surrogate Recovery

Base Neutrals / Acids

Matrix : Aqueous

Batch # 31795

Method : EPA 8270

## % Recovery Objectives

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S1	2-Fluorophenol	21 - 100
S2	Phenol-d5	10 - 94
S3	Nitrobenzene-d5	35 - 114
S4	2-Fluorobiphenyl	43 - 116
S5	2,4,6-Tribromophenol	10 - 123
S6	Terphenyl-d14	33 - 141

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Sample	File	S1	S2	S3	S4	S5	S6
<hr/>							
31795BLK	B9716	40	27	60	59	71	88
31795LCS	B9717	53	33	66	60	84	88
31795LCSD	B9718	46	28	72	58	76	84
85447-1	B9755	12	4	3	89	70	84
^^Note: MATRIX EFFECT							
85447-2	B9756	21	16	38	33	39	47
^^Note: MATRIX EFFECT							
85447-2MS	B9757	12	24	71	67	19	72
^^Note: MATRIX EFFECT							
85447-2MSD	B9758	43	37	66	60	76	70
^^Note: MATRIX EFFECT							
85447-5	B9759	49	38	75	63	88	85
85447-6	B9760	41	28	61	58	75	87
85447-7	B9761	38	27	70	62	76	88
85447-8	A6248	55	39	70	95	170	99
^^Note: MATRIX EFFECT							
85447-9	A6249	24	20	63	76	6	109
^^Note: MATRIX EFFECT							
85553-16	B9794	25	16	45	81	22	34
85526-1	B9778	48	13	57	57	90	40
^^Note: NO USABLE DATA							
85526-1D	B9792	47	42	63	59	90	49
^^Note: 1:5							
85760	B9862			52	60		68
^^Note: BN ONLY							
85657-9	A6332	32	23	55	84	44	108

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## Analytical Services Inc. Batch QC

Surrogate Recovery

Base Neutrals / Acids

Matrix : Aqueous

Batch # 31795

Method : EPA 8270

## % Recovery Objectives

S1	2-Fluorophenol	21 - 100
S2	Phenol-d5	10 - 94
S3	Nitrobenzene-d5	35 - 114
S4	2-Fluorobiphenyl	43 - 116
S5	2,4,6-Tribromophenol	10 - 123
S6	Terphenyl-d14	33 - 141

Sample	File	S1	S2	S3	S4	S5	S6
85657-11	A6333	47	32	74	108	72	124
85657-12	A6334	35	28	73	103	64	119
85593-1	B9971			68	74		82
^^Note: BN ONLY							
85593-2	B9972			71	71		75
^^Note: BN ONLY							
85593-3	B9973			47	54		93
^^Note: BN ONLY							
85656-1	A6380	46	37	82	103	81	103
85609-1D	A6388						
^^Note: 1:200 SURR.DILUTEDOUT							
85609-2D	A6389						
^^Note: 1:200 SURR. DILUTED OUT							



Sample Batch Information  
Base Neutrals / Acids      Method : EPA 8270

Sample ID	Preparation			Preparation Notes	Analysis			Inst #
	Date	Time	By		Date	Time	By	
31795BLK	07/31/97	0830	JPH	85447-11	08/01/97	1605	RFA	5971
31795LCS	07/31/97	0830	JPH		08/01/97	1640	RFA	5971
31795LCSD	07/31/97	0830	JPH		08/01/97	1714	RFA	5971
85447-1	07/31/97	0830	JPH		08/04/97	1825	RFA	5971
85447-2	07/31/97	0830	JPH		08/04/97	1900	RFA	5971
85447-2MS	07/31/97	0830	JPH	85447-3	08/04/97	1934	RFA	5971
85447-2MSD	07/31/97	0830	JPH	85447-4	08/04/97	2009	RFA	5971
85447-5	07/31/97	0830	JPH		08/04/97	2043	RFA	5971
85447-6	07/31/97	0830	JPH		08/04/97	2118	RFA	5971
85447-7	07/31/97	0830	JPH		08/04/97	2152	RFA	5971
85447-8	07/31/97	0830	JPH		08/05/97	1440	TAS	5970
85447-9	07/31/97	0830	JPH		08/05/97	1514	TAS	5970
85526-1	08/04/97	1500	JH/TB		08/05/97	1710	RFA	5971
85553-16	08/05/97	0900	JH/TB		08/06/97	1334	RFA	5971
85593-1	08/06/97	0930	JH		08/15/97	0943	RFA	5971
85593-2	08/06/97	0930	JH		08/15/97	1018	RFA	5971
85593-3	08/06/97	0930	JH		08/15/97	1052	RFA	5971
85609-1	08/07/97	1000	JH		/	/		
85609-2	08/07/97	1000	JH		/	/		
85656-1	08/07/97	1000	JH		08/14/97	1157	TAS	5970
85657-11	08/07/97	1000	JPH		08/12/97	1747	TAS	5970
85657-12	08/07/97	1000	JPH		08/12/97	1819	TAS	5970
85657-9	08/07/97	1000	JPH		08/12/97	1714	TAS	5970
85526-1D	08/06/97	0900	DMB		08/06/97	1228	RFA	5971
85760	08/08/97	1430	LNI		08/10/97	0026	DMB	5971
85609-1D	08/14/97	1200	RFA		08/14/97	1622	TAS	5970
85609-2D	08/14/97	1200	RFA		08/14/97	1655	TAS	5970

Analytical Services Inc. Batch QC  
 For Report Number :85657  
 Base Neutrals / Acids

Matrix : Soil/Sediment

Batch # 31934

Method : EPA 8270

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
Phenol	43	32	29	26 - 90	0 - 35
2-Chlorophenol	44	35	25	25 - 102	0 - 50
1,4-Dichlorobenzene	39	32	20	28 - 104	0 - 27
N-Nitrosodipropylamine	46	44	6	41 - 126	0 - 38
1,2,4-Trichlorobenzene	46	39	16	38 - 107	0 - 23
4-Chloro-3-methylphenol	46	35	27	26 - 103	0 - 33
Acenaphthene	50	41	19	31 - 137	0 - 19
2,4-Dinitrotoluene	50	37	30	28 - 89	0 - 47
4-Nitrophenol	45	34	28	11 - 114	0 - 50
Pentachlorophenol	45	33	29	17 - 109	0 - 47
Pyrene	63	64	2	35 - 142	0 - 36
Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
Phenol	53	53	1	26 - 90	0 - 35
2-Chlorophenol	53	52	2	25 - 102	0 - 50
1,4-Dichlorobenzene	42	42	1	28 - 104	0 - 27
N-Nitrosodipropylamine	48	49	1	41 - 126	0 - 38
1,2,4-Trichlorobenzene	48	46	4	38 - 107	0 - 23
4-Chloro-3-methylphenol	52	53	1	26 - 103	0 - 33
Acenaphthene	95	95	0	31 - 137	0 - 19
2,4-Dinitrotoluene	55	64	15	28 - 89	0 - 47
4-Nitrophenol	42	49	14	11 - 114	0 - 50
Pentachlorophenol	38	42	10	17 - 109	0 - 47
Pyrene	66	80	19	35 - 142	0 - 36

## Analytical Services Inc. Batch QC

Surrogate Recovery

Base Neutrals / Acids

Matrix : Soil/Sediment Batch # 31934

Method : EPA 8270

## % Recovery Objectives

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S1	2-Fluorophenol	25 - 121
S2	Phenol-d5	24 - 113
S3	Nitrobenzene-d5	23 - 120
S4	2-Fluorobiphenyl	30 - 115
S5	2,4,6-Tribromophenol	19 - 122
S6	Terphenyl-d14	18 - 137

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Sample	File	S1	S2	S3	S4	S5	S6
<hr/>							
31934BLK	B9846	39	38	37	42	36	59
31934LCS	B9847	41	40	62	47	54	62
31934LCSD	B9848	33	32	33	38	38	63
85657-2	B9849	33	31	32	38	32	50
85657-4	B9850	37	36	38	40	41	63
85657-5	B9851	48	45	49	54	49	72
85657-6	B9852	47	45	51	53	55	55
85657-7	B9853	32	34	37	41	49	59
85657-8DUP	B9854	37	37	43	51	48	73
85657-13	B9855	49	47	54	59	54	67
85657-14	B9856	37	36	39	42	37	59
85657-15	B9857	50	49	57	62	68	74
85657-16	B9858	41	40	45	49	43	78
85657-17	B9859	41	39	46	50	45	67
85657-19	B9860	48	44	51	56	47	72
85714	B9861	20	20	23	26	30	42
^^Note: REEXTRACT							
85714RR	A6300	41	45	48	83	42	64
85742-5	A6301	44	49	53	94	48	74
85738-1	A6379	7	34	34	63		62
^^Note: MATRIX EFFECT							
85656-2	A6381	38	43	40	60	44	50
85705-1	A6382	25	31	28	53	2	29
^^Note: MATRIX EFFECT							
85705-2	A6383	14	31	31	59		13
^^Note: MATRIX EFFECT							
85657-3MS	A6295	27	26	25	48	30	46
85657-3MSD	A6296	46	46	55	87	48	75
85657-18MS	A6297	38	38	45	75	36	59
^^Note: REPORTED SPIKE INFO.							

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## Analytical Services Inc. Batch QC

Surrogate Recovery

Base Neutrals / Acids

Matrix : Soil/Sediment Batch # 31934

Method : EPA 8270

## % Recovery Objectives

S1	2-Fluorophenol	25 - 121
S2	Phenol-d5	24 - 113
S3	Nitrobenzene-d5	23 - 120
S4	2-Fluorobiphenyl	30 - 115
S5	2,4,6-Tribromophenol	19 - 122
S6	Terphenyl-d14	18 - 137

Sample	File	S1	S2	S3	S4	S5	S6
85657-18MSD	A6298	35	37	41	72	41	70

^^Note: REPORTED SPIKE INFO.

Sample Batch Information  
Base Neutrals / Acids Method : EPA 8270

Sample ID	Preparation			Preparation Notes	Analysis			Inst #
	Date	Time	By		Date	Time	By	
85714	08/08/97	0900	ASF		08/09/97	2350	DMB	5971
85656-2	08/08/97	0900	ASF		08/14/97	1231	TAS	5970
85657-2	08/08/97	0900	ASF		08/09/97	1636	DMB	5971
85657-3MS	08/08/97	0900	ASF		08/11/97	1316	TAS	5970
85657-4	08/08/97	0900	ASF		08/09/97	1712	DMB	5971
85657-5	08/08/97	0900	ASF		08/09/97	1748	DMB	5971
85657-6	08/08/97	0900	ASF		08/09/97	1824	DMB	5971
85657-7	08/08/97	0900	ASF		08/09/97	1901	DMB	5971
85657-8DUP	08/08/97	0900	ASF		08/09/97	1937	DMB	5971
85657-13	08/08/97	0900	ASF		08/09/97	2013	DMB	5971
85657-14	08/08/97	0900	ASF		08/09/97	2049	DMB	5971
85657-15	08/08/97	0900	ASF		08/09/97	2125	DMB	5971
85657-16	08/08/97	0900	ASF		08/09/97	2201	DMB	5971
85657-17	08/08/97	0900	ASF		08/09/97	2237	DMB	5971
85657-18MS	08/08/97	0900	ASF		08/11/97	1422	TAS	5970
85657-19	08/08/97	0900	ASF		08/09/97	2314	DMB	5971
85705-1	08/08/97	0900	ASF		08/14/97	1304	TAS	5970
85705-2	08/08/97	0900	ASF		08/14/97	1337	TAS	5970
85657-3MSD	08/08/97	0900	ASF		08/11/97	1349	TAS	5971
85657-18MSD	08/08/97	0900	ASF		08/11/97	1455	TAS	5971
31934BLK	08/08/97	0900	ASF		08/09/97	1448	DMB	5971
31934LCS	08/08/97	0900	ASF		08/09/97	1524	DMB	5971
31934LCSD	08/08/97	0900	ASF		08/09/97	1600	DMB	5971
85738-1	08/11/97	0800	ASF		08/14/97	1124	TAS	5970
85742-5	08/11/97	0800	ASF		08/11/97	1601	TAS	5970
85714RR	08/11/97	1100	ASF		08/11/97	1528	TAS	5970

Analytical Services Inc. Batch QC  
For Report Number :85657  
Volatile Organics

Matrix : Aqueous

Batch # 31956

Method : EPA 8260

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	107	100	7	61 - 145	0 - 14
Trichloroethene	99	102	3	71 - 120	0 - 14
Benzene	99	98	1	76 - 127	0 - 11
Toluene	103	103	0	76 - 125	0 - 13
Chlorobenzene	103	104	1	75 - 130	0 - 13

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	96	100	3	61 - 145	0 - 14
Trichloroethene	98	98	1	71 - 120	0 - 14
Benzene	108	108	0	76 - 127	0 - 11
Toluene	108	109	0	76 - 125	0 - 13
Chlorobenzene	102	103	1	75 - 130	0 - 13

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Aqueous

Batch # 31956

Method : EPA 8260

## % Recovery Objectives

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S1	1,2-Dichloroethane-d4	76 - 114
S2	Toluene-d8	88 - 110
S3	Ethylbenzene-d10	75 - 115
S4	4-Bromofluorobenzene	86 - 115

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Sample	File	S1	S2	S3	S4	S5	S6
<hr/>							
31956BLK2A	>RM960	99	101	96	92		
85615-1	>RM961	94	102	98	88		
85615-1MS	>RM962	102	99	94	90		
85615-1MSD	>RM963	108	99	96	95		
85615-2	>RM964	100	102	97	92		
85615-3	>RM965	105	100	95	96		
85615-4	>RM966	102	101	95	93		
85615-5	>RM967	104	103	97	95		
85615-6	>RM968	101	101	98	91		
85615-7	>RM969	100	100	96	91		
85490-3RA	>RM984	107	101	96	95		
^^Note: RA AT DIL							
85490-4RA	>RM985	103	99	92	90		
^^Note: RA FOR C/O							
31956BLK2B	>RM926	98	102	97	90		
31956LCS	>RM943	108	103	102	105		
31956LCSD	>RM936	104	102	102	107		
31956BLK1A	>LB687	99	98	101	106		
^^Note: 85657-22							
85657-1	>LB692	97	101	99	103		
85657-9	>LB693	98	102	99	101		
85657-10	>LB694	102	99	98	105		
85657-11	>LB695	101	100	99	104		
85657-12	>LB696	102	98	99	103		
31956BLK1B	>LB721	97	98	97	103		
85657-12DUP	>LB738	94	101	101	103		

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Sample Batch Information  
Volatile Organics Method : EPA 8260

Sample ID	Preparation		Preparation Notes	Analysis			Inst #
	Date	Time By		Date	Time By		
31956BLK2A	/	/		08/08/97	1001 JKP	VOA2	
85615-1	/	/		08/08/97	1052 JKP	VOA2	
85615-1MS	/	/		08/08/97	1126 JKP	VOA2	
85615-1MSD	/	/		08/08/97	1200 JKP	VOA2	
85615-2	/	/		08/08/97	1233 JKP	VOA2	
85615-3	/	/		08/08/97	1355 JKP	VOA2	
85615-4	/	/		08/08/97	1429 JKP	VOA2	
85615-5	/	/		08/08/97	1503 JKP	VOA2	
85615-6	/	/		08/08/97	1537 JKP	VOA2	
85615-7	/	/		08/08/97	1611 JKP	VOA2	
85490-3RA	/	/		08/09/97	0112 JKP	VOA2	
85490-4RA	/	/		08/09/97	0146 JKP	VOA2	
31956BLK2B	/	/		08/07/97	1050 JKP	VOA2	
31956LCS	/	/		08/07/97	2015 JKP	VOA2	
31956LCSD	/	/		08/07/97	1615 JKP	VOA2	
31956BLK1A	/	/		08/11/97	1130 JKP	VOA1	
85657-1	/	/		08/11/97	1505 JKP	VOA1	
85657-9	/	/		08/11/97	1540 JKP	VOA1	
85657-10	/	/		08/11/97	1615 JKP	VOA1	
57-11	/	/		08/11/97	1650 JKP	VOA1	
85657-12	/	/		08/11/97	1725 JKP	VOA1	
31956BLK1B	/	/		08/12/97	1042 JKP	VOA1	
85657-12DUP	/	/		08/12/97	1929 JKP	VOA1	



Analytical Services Inc. Batch QC  
 For Report Number :85657  
 Volatile Organics

Matrix : Soil/Sediment

Batch # 31980

Method : EPA 8260

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	86	89	3	61 - 145	0 - 14
Trichloroethene	94	95	1	71 - 120	0 - 14
Benzene	109	111	2	76 - 127	0 - 11
Toluene	110	109	1	76 - 125	0 - 13
Chlorobenzene	107	109	2	75 - 130	0 - 13

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	88	93	5	61 - 145	0 - 14
Trichloroethene	91	90	2	71 - 120	0 - 14
Benzene	108	110	3	76 - 127	0 - 11
Toluene	109	115	5	76 - 125	0 - 13
Chlorobenzene	103	100	3	75 - 130	0 - 13

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Soil/Sediment Batch # 31980

Method : EPA 8260

## % Recovery Objectives

S1	1,2-Dichloroethane-d4	70 - 121
S2	Toluene-d8	81 - 117
S3	Ethylbenzene-d10	79 - 115
S4	4-Bromofluorobenzene	74 - 121

Sample	File	S1	S2	S3	S4	S5	S6
31980BLK1A	>LB687	99	98	101	106		
^^Note: 85657-23							
85657-2	>LB707	95	102	99	102		
85657-2MS	>LB708	95	104	103	101		
^^Note: 85657-3							
85657-2MSD	>LB716	103	107	103	98		
^^Note: 85657-25							
85657-4	>LB717	96	111	102	94		
31980BLK1B	>LB721	97	98	97	103		
31980LCS	>LB724	95	103	99	103		
31980LCSD	>LB725	95	103	99	103		
85657-8	>LB729	94	102	103	102		
85657-13	>LB730	91	101	102	100		
85657-16	>LB809	85	97		99		
85657-5	>LB726	90	104	102	100		
85657-6	>LB727	98	107	104	97		
85657-7	>LB728	96	104	101	101		
31980BLK1C	>LB780	103	106	103	106		
85785-2	>LB799	109	112	108	97		
85785-3	>LB800	96	103	107	108		
85785-4	>LB801	97	103	105	108		
31980BLK1D	>LB812	98	101	103	111		
^^Note: 85785-27							
85785-6	>LB816	97	103	105	104		
85785-5	>LB817	94	102	105	107		
85785-7	>LB818	93	102	104	109		
85785-8	>LB819	95	116	113	98		
85785-9	>LB828	91	103	109	96		
85785-10	>LB829	88	100	109	99		
85785-11	>LB830	90	103	112	102		
85785-14	>LB831	89	101	109	99		
85785-9DUP	>LB837	91	102	109	100		

Sample Batch Information  
Volatile Organics Method : EPA 8260

Sample ID	Preparation		Preparation Notes	Analysis			Inst #
	Date	Time By		Date	Time By		
31980BLK1A	/	/		08/11/97	1130	JKP	VOA1
85657-2	/	/		08/11/97	2325	JKP	VOA1
85657-2MS	/	/		08/12/97	0000	JKP	VOA1
85657-2MSD	/	/		08/12/97	0439	JKP	VOA1
85657-4	/	/		08/12/97	0513	JKP	VOA1
31980BLK1B	/	/		08/12/97	1042	JKP	VOA1
31980LCS	/	/		08/12/97	1227	JKP	VOA1
31980LCSD	/	/		08/12/97	1301	JKP	VOA1
85657-8	/	/		08/13/97	0011	JKP	VOA1
85657-13	/	/		08/13/97	0046	JKP	VOA1
85657-16	/	/		08/15/97	0209	JKP	VOA1
85657-5	/	/		08/12/97	1337	JKP	VOA1
85657-6	/	/		08/12/97	1519	JKP	VOA1
85657-7	/	/		08/12/97	1558	JKP	VOA1
31980BLK1C	/	/		08/14/97	1011	JKP	VOA1
85785-2	/	/		08/14/97	2016	JKP	VOA1
85785-3	/	/		08/14/97	2051	JKP	VOA1
85785-4	/	/		08/14/97	2127	JKP	VOA1
31980BLK1D	/	/		08/15/97	1112	JKP	VOA1
85785-6	/	/		08/15/97	1337	JKP	VOA1
85785-5	/	/		08/15/97	1413	JKP	VOA1
85785-7	/	/		08/15/97	1448	JKP	VOA1
85785-8	/	/		08/15/97	1523	JKP	VOA1
85785-9	/	/		08/15/97	2207	JKP	VOA1
85785-10	/	/		08/15/97	2242	JKP	VOA1
85785-11	/	/		08/15/97	2318	JKP	VOA1
85785-14	/	/		08/15/97	2353	JKP	VOA1
85785-9DUP	/	/		08/16/97	0325	JKP	VOA1

Analytical Services Inc. Batch QC  
 For Report Number :85657  
 Volatile Organics

Matrix : Soil/Sediment

Batch # 31992

Method : EPA 8260

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	86	89	3	61 - 145	0 - 14
Trichloroethene	94	95	1	71 - 120	0 - 14
Benzene	109	111	2	76 - 127	0 - 11
Toluene	110	109	1	76 - 125	0 - 13
Chlorobenzene	107	109	2	75 - 130	0 - 13

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	92	102	11	61 - 145	0 - 14
Trichloroethene	94	93	1	71 - 120	0 - 14
Benzene	107	109	2	76 - 127	0 - 11
Toluene	107	112	4	76 - 125	0 - 13
Chlorobenzene	103	103	0	75 - 130	0 - 13

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Soil/Sediment Batch # 31992

Method : EPA 8260

## % Recovery Objectives

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S1	1,2-Dichloroethane-d4	70 - 121
S2	Toluene-d8	81 - 117
S3	Ethylbenzene-d10	79 - 115
S4	4-Bromofluorobenzene	74 - 121

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Sample	File	S1	S2	S3	S4	S5	S6
31992BLK1A	>LB721	97	98	97	103		
^^Note: 85657-24							
31992LCS	>LB724	95	103	99	103		
31992LCSD	>LB725	95	103	99	103		
85657-17	>LB731	92	106	104	98		
85657-17MS	>LB769	98	107	105	107		
^^Note: 85657-18							
85657-17MSD	>LB733	92	105	101	99		
^^Note: 85657-26							
85657-19	>LB734	92	104	100	97		
31992BLK1B	>LB752	96	99	98	102		
^^Note: 85785-29							
31992BLK1C	>LB812	98	101	103	111		
85785-18	>LB832	89	102	110	98		
85785-19	>LB833	95	105	111	90		
85785-20	>LB834	89	100	109	101		
85785-21	>LB835	93	102	106	97		
85785-22	>LB836	91	103	107	97		
85785-23	>LB838	88	106	111	95		
85657-16RA	>LB863	96	101	106	101		
^^Note: RA AT LESSER DIL							

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Sample Batch Information  
Volatile Organics Method : EPA 8260

Sample ID	Preparation			Preparation Notes	Analysis			Inst #
	Date	Time	By		Date	Time	By	
31992BLK1A	/	/			08/12/97	1042	JKP	VOA1
31992LCS	/	/			08/12/97	1227	JKP	VOA1
31992LCSD	/	/			08/12/97	1301	JKP	VOA1
85657-17	/	/			08/13/97	0121	JKP	VOA1
85657-17MS	/	/			08/13/97	1739	JKP	VOA1
85657-17MSD	/	/			08/13/97	0323	JKP	VOA1
85657-19	/	/			08/13/97	0307	JKP	VOA1
31992BLK1B	/	/			08/13/97	1157	JKP	VOA1
31992BLK1C	/	/			08/15/97	1112	JKP	VOA1
85785-18	/	/			08/16/97	0028	JKP	VOA1
85785-19	/	/			08/16/97	0104	JKP	VOA1
85785-20	/	/			08/16/97	0139	JKP	VOA1
85785-21	/	/			08/16/97	0214	JKP	VOA1
85785-22	/	/			08/16/97	0250	JKP	VOA1
85785-23	/	/			08/16/97	0400	JKP	VOA1
85657-16RA	/	/			08/18/97	1100	JKP	VOA1

Analytical Services Inc. Batch QC  
For Report Number :85657

## QC Batch General Information

Batch Number	Analyte	Analysis Method	Matrix	Blank Result	Prep. Method
31510	Ag	EPA 6010	Aqueous	< 0.0050	
31510	Ba	EPA 6010	Aqueous	< 0.0100	
31510	Be	EPA 6010	Aqueous	< 0.0030	
31510	Cd	EPA 6010	Aqueous	< 0.0050	
31510	Cr	EPA 6010	Aqueous	< 0.0050	
^^Note : LCS/LCSD RPD > 20%					
31510	Cu	EPA 6010	Aqueous	< 0.0080	
31510	Ni	EPA 6010	Aqueous	< 0.0050	
31510	Pb	EPA 6010	Aqueous	< 0.0050	
31510	Sb	EPA 6010	Aqueous	< 0.0060	
31510	Zn	EPA 6010	Aqueous	< 0.0100	
^^Note : BATCH PASSES ON LCS/LCSD/MS/PDS DATA; MSRPD > 20%					
31515	As	EPA 7060	Aqueous	< 0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
31515	Tl	EPA 7841	Aqueous	< 0.0020	
^^Note : BATCH PASSES ON LCS/LCSD/MS/MSD DATA					
31515	Se	EPA 7740	Aqueous	< 0.0100	
^^Note : BATCH PASSES ON LCS/LCSD/MS/MSD DATA					
31518	Ag	EPA 6010	Aqueous	< 0.0050	
31518	Ba	EPA 6010	Aqueous	< 0.0100	
31518	Be	EPA 6010	Aqueous	< 0.0030	
31518	Cd	EPA 6010	Aqueous	< 0.0050	
31518	Cr	EPA 6010	Aqueous	< 0.0050	
31518	Cu	EPA 6010	Aqueous	< 0.0080	
31518	Ni	EPA 6010	Aqueous	< 0.0050	
31518	Pb	EPA 6010	Aqueous	< 0.0050	
31518	Sb	EPA 6010	Aqueous	< 0.0060	
31518	Zn	EPA 6010	Aqueous	< 0.0200	
31527	Tl	EPA 7841	Soil	< 0.0100	
31527	Se	EPA 7740	Soil	< 0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
31527	As	EPA 7060	Soil	< 0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
31528	Ag	EPA 6010	Soil	< 0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
31528	Ba	EPA 6010	Soil	< 0.0100	
31528	Be	EPA 6010	Soil	< 0.0050	
31528	Cd	EPA 6010	Soil	< 0.0050	
31528	Cr	EPA 6010	Soil	< 0.0100	

Analytical Services Inc. Batch QC  
For Report Number :85657

## QC Batch General Information

Batch Number	Analyte	Analysis Method	Matrix	Blank Result	Prep. Method
31528	Cu	EPA 6010	Soil	<	0.0200
31528	Ni	EPA 6010	Soil	<	0.0200
31528	Pb	EPA 6010	Soil	<	0.0250
31528	Sb	EPA 6010	Soil	<	0.0500
^^Note : QC PASSES ON LCS,LCSD,PDS					
31528	Zn	EPA 6010	Soil	<	0.0200
31539	Tl	EPA 7841	Soil	<	0.0100
31539	As	EPA 7060	Soil	<	0.0100
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
31539	Se	EPA 7740	Soil	<	0.0100
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
31540	Ag	EPA 6010	Soil	<	0.0100
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
31540	Ba	EPA 6010	Soil	<	0.0100
31540	Be	EPA 6010	Soil	<	0.0100
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
31540	Cd	EPA 6010	Soil	<	0.0100
^^Note : QC PASSES ON LCS,LCSD,MSD					
31540	Cr	EPA 6010	Soil	<	0.0100
31540	Ni	EPA 6010	Soil	<	0.0200
31540	Pb	EPA 6010	Soil	<	0.0250
31540	Sb	EPA 6010	Soil	<	0.0500
^^Note : QC PASSES ON LCS,LCSD,PDS					
31540	Zn	EPA 6010	Soil	<	0.0200
31540	Cu	EPA 6010	Soil	<	0.0200
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
31846	Hg	EPA 7470	Aqueous	<	0.0002
31847	Hg	EPA 7471	Soil	<	0.0002
31848	Hg	EPA 7471	Soil	<	0.0002
31928	CN	EPA 9010	Aq/Solid	<	0.0200
31959	%Moist	ASTM D 2216	Soil		0.0000
32200	Ba	EPA 6010	Soil	<	0.0100
32200	Cu	EPA 6010	Soil	<	0.0200
^^Note : QC PASSES ON LCS,LCSD,PDS					
32200	Ni	EPA 6010	Soil	<	0.0200
^^Note : QC PASSES ON LCS,LCSD,MSD,PDS					
32200	Zn	EPA 6010	Soil	<	0.0200
^^Note : QC PASSES ON LCS,LCSD,MSD,PDS					



Analytical Services Inc. Batch QC  
For Report Number :85657

## Lab Control Information

Batch Number	Analyte	Method	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
31510	Ag	EPA 6010	96	94	2	76 - 124	0 - 20
31510	Ba	EPA 6010	99	85	15	76 - 124	0 - 20
31510	Be	EPA 6010	96	82	16	76 - 124	0 - 20
31510	Cd	EPA 6010	96	82	16	76 - 124	0 - 20
31510	Cr	EPA 6010	110	83	28	76 - 124	0 - 20
31510	Cu	EPA 6010	100	85	16	76 - 124	0 - 20
31510	Ni	EPA 6010	96	82	16	76 - 124	0 - 20
31510	Pb	EPA 6010	97	83	16	76 - 124	0 - 20
31510	Sb	EPA 6010	99	84	16	76 - 124	0 - 20
31510	Zn	EPA 6010	94	82	14	76 - 124	0 - 20
31515	As	EPA 7060	82	85	4	76 - 124	0 - 20
31515	Tl	EPA 7841	103	103	0	76 - 124	0 - 20
31515	Se	EPA 7740	110	109	1	76 - 124	0 - 20
31518	Ag	EPA 6010	81	80	1	76 - 124	0 - 20
31518	Ba	EPA 6010	89	89	0	76 - 124	0 - 20
31518	Be	EPA 6010	82	83	1	76 - 124	0 - 20
31518	Cd	EPA 6010	86	87	1	76 - 124	0 - 20
31518	Cr	EPA 6010	80	81	1	76 - 124	0 - 20
31518	Cu	EPA 6010	88	89	1	76 - 124	0 - 20
31518	Ni	EPA 6010	83	85	2	76 - 124	0 - 20
31518	Pb	EPA 6010	86	87	1	76 - 124	0 - 20
31518	Sb	EPA 6010	86	87	1	76 - 124	0 - 20
31518	Zn	EPA 6010	82	87	6	76 - 124	0 - 20
31527	Tl	EPA 7841	83	91	9	76 - 124	0 - 30
31527	Se	EPA 7740	100	93	7	76 - 124	0 - 30
31527	As	EPA 7060	86	78	10	76 - 124	0 - 30
31528	Ag	EPA 6010	83	85	2	76 - 124	0 - 30
31528	Ba	EPA 6010	86	88	2	76 - 124	0 - 30
31528	Be	EPA 6010	89	91	2	76 - 124	0 - 30
31528	Cd	EPA 6010	79	80	1	76 - 124	0 - 30
31528	Cr	EPA 6010	83	87	5	76 - 124	0 - 30
31528	Cu	EPA 6010	81	82	1	76 - 124	0 - 30
31528	Ni	EPA 6010	77	81	5	76 - 124	0 - 30
31528	Pb	EPA 6010	80	84	5	76 - 124	0 - 30
31528	Sb	EPA 6010	88	91	3	76 - 124	0 - 30
31528	Zn	EPA 6010	77	81	5	76 - 124	0 - 30
31539	Tl	EPA 7841	106	98	8	76 - 124	0 - 30
31539	As	EPA 7060	107	99	8	76 - 124	0 - 30
31539	Se	EPA 7740	85	81	5	76 - 124	0 - 30
31540	Ag	EPA 6010	76	78	3	76 - 124	0 - 30
31540	Ba	EPA 6010	87	92	6	76 - 124	0 - 30
31540	Be	EPA 6010	119	118	1	76 - 124	0 - 30
31540	Cd	EPA 6010	90	90	0	76 - 124	0 - 30
31540	Cr	EPA 6010	120	100	18	76 - 124	0 - 30
31540	Ni	EPA 6010	79	82	4	76 - 124	0 - 30
31540	Pb	EPA 6010	77	78	1	76 - 124	0 - 30
31540	Sb	EPA 6010	104	110	6	76 - 124	0 - 30

Analytical Services Inc. Batch QC  
For Report Number :85657

Control Information								
Batch Number	Analyte	Method	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range	
31540	Zn	EPA 6010	82	78	5	76 - 124	0 - 30	
31540	Cu	EPA 6010	77	78	1	76 - 124	0 - 30	
31846	Hg	EPA 7470	85	82	4	76 - 124	0 - 20	
31847	Hg	EPA 7471	97	80	19	76 - 124	0 - 30	
31848	Hg	EPA 7471	100	88	13	76 - 124	0 - 30	
31928	CN	EPA 9010	92	94	2	85 - 115	0 - 30	
32200	Ba	EPA 6010	82	86	5	76 - 124	0 - 30	
32200	Cu	EPA 6010	76	84	10	76 - 124	0 - 30	
32200	Ni	EPA 6010	85	79	7	76 - 124	0 - 30	
32200	Zn	EPA 6010	84	81	4	76 - 124	0 - 30	

Matrix Spike Information								
Batch Number	Analyte	Method	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range	
31510	Ag	EPA 6010	99	100	1	76 - 124	0 - 20	
31510	Ba	EPA 6010	98	81	19	76 - 124	0 - 20	
31510	Be	EPA 6010	95	78	20	76 - 124	0 - 20	
31510	Cd	EPA 6010	95	78	20	76 - 124	0 - 20	
31510	Cr	EPA 6010	96	79	19	76 - 124	0 - 20	
31510	Cu	EPA 6010	98	82	18	76 - 124	0 - 20	
31510	Ni	EPA 6010	94	78	19	76 - 124	0 - 20	
31510	Pb	EPA 6010	95	79	18	76 - 124	0 - 20	
31510	Sb	EPA 6010	98	81	19	76 - 124	0 - 20	
31510	Zn	EPA 6010	86	70	21	76 - 124	0 - 20	
31515	As	EPA 7060	55	71	25	76 - 124	0 - 20	
31515	Tl	EPA 7841	93	109	16	76 - 124	0 - 20	
31515	Se	EPA 7740	100	106	6	76 - 124	0 - 20	
31518	Ag	EPA 6010	78	78	0	76 - 124	0 - 20	
31518	Ba	EPA 6010	86	85	1	76 - 124	0 - 20	
31518	Be	EPA 6010	80	80	0	76 - 124	0 - 20	
31518	Cd	EPA 6010	84	84	0	76 - 124	0 - 20	
31518	Cr	EPA 6010	78	76	3	76 - 124	0 - 20	
31518	Cu	EPA 6010	86	85	1	76 - 124	0 - 20	
31518	Ni	EPA 6010	82	82	0	76 - 124	0 - 20	
31518	Pb	EPA 6010	84	84	0	76 - 124	0 - 20	
31518	Sb	EPA 6010	85	84	1	76 - 124	0 - 20	
31518	Zn	EPA 6010	78	78	0	76 - 124	0 - 20	
31527	Tl	EPA 7841	82	86	5	76 - 124	0 - 30	
31527	Se	EPA 7740	67	68	1	76 - 124	0 - 30	
31527	As	EPA 7060	70	71	1	76 - 124	0 - 30	
31528	Ag	EPA 6010	70	72	3	76 - 124	0 - 30	
31528	Ba	EPA 6010	91	85	7	76 - 124	0 - 30	
31528	Be	EPA 6010	90	88	2	76 - 124	0 - 30	
31528	Cd	EPA 6010	80	78	3	76 - 124	0 - 30	
31528	Cr	EPA 6010	86	84	2	76 - 124	0 - 30	

Analytical Services Inc. Batch QC  
For Report Number :85657

## Matrix Spike Information

Batch Number	Analyte	Method	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
31528	Cu	EPA 6010	87	93	7	76 - 124	0 - 30
31528	Ni	EPA 6010	81	79	3	76 - 124	0 - 30
31528	Pb	EPA 6010	88	83	6	76 - 124	0 - 30
31528	Sb	EPA 6010	56	73	26	76 - 124	0 - 30
31528	Zn	EPA 6010	95	84	12	76 - 124	0 - 30
31539	Tl	EPA 7841	102	90	13	76 - 124	0 - 30
31539	As	EPA 7060	38	55	37	76 - 124	0 - 30
31539	Se	EPA 7740	60	102	52	76 - 124	0 - 30
31540	Ag	EPA 6010	94	64	38	76 - 124	0 - 30
31540	Ba	EPA 6010	88	86	2	76 - 124	0 - 30
31540	Be	EPA 6010	59	61	3	76 - 124	0 - 30
31540	Cd	EPA 6010	150	115	26	76 - 124	0 - 30
31540	Cr	EPA 6010	110	88	22	76 - 124	0 - 30
31540	Ni	EPA 6010	94	85	10	76 - 124	0 - 30
31540	Pb	EPA 6010	84	77	9	76 - 124	0 - 30
31540	Zn	EPA 6010	95	84	12	76 - 124	0 - 30
31540	Cu	EPA 6010	66	59	11	76 - 124	0 - 30
31846	Hg	EPA 7470	94	94	0	76 - 124	0 - 20
31847	Hg	EPA 7471	96	91	5	76 - 124	0 - 30
31848	Hg	EPA 7471	98	89	10	76 - 124	0 - 30
31928	CN	EPA 9010	94	92	2	75 - 125	0 - 30
32200	Ba	EPA 6010	83	83	0	76 - 124	0 - 30
32200	Cu	EPA 6010	70	73	4	76 - 124	0 - 30
32200	Ni	EPA 6010	70	78	11	76 - 124	0 - 30
32200	Zn	EPA 6010	73	76	4	76 - 124	0 - 30

## Post Digestion Spike Information

Batch Number	Analyte	Method	PDS %Rec	%Recovery Range
31510	Ag	EPA 6010	99	76 - 124
31510	Ba	EPA 6010	100	76 - 124
31510	Be	EPA 6010	98	76 - 124
31510	Cd	EPA 6010	98	76 - 124
31510	Cr	EPA 6010	98	76 - 124
31510	Cu	EPA 6010	100	76 - 124
31510	Ni	EPA 6010	98	76 - 124
31510	Pb	EPA 6010	98	76 - 124
31510	Sb	EPA 6010	100	76 - 124
31510	Zn	EPA 6010	93	76 - 124
31515	As	EPA 7060	73	76 - 124
31515	Tl	EPA 7841	129	76 - 124
31515	Se	EPA 7740	169	76 - 124
31518	Ag	EPA 6010	77	76 - 124
31518	Ba	EPA 6010	86	76 - 124
31518	Be	EPA 6010	81	76 - 124

Analytical Services Inc. Batch QC  
For Report Number :85657

Digestion Spike Information

Batch Number	Analyte	Method	PDS %Rec	%Recovery Range
31518	Cd	EPA 6010	85	76 - 124
31518	Cr	EPA 6010	77	76 - 124
31518	Cu	EPA 6010	86	76 - 124
31518	Ni	EPA 6010	83	76 - 124
31518	Pb	EPA 6010	85	76 - 124
31518	Sb	EPA 6010	85	76 - 124
31518	Zn	EPA 6010	82	76 - 124
31527	Tl	EPA 7841	91	76 - 124
31527	Se	EPA 7740	95	76 - 124
31527	As	EPA 7060	88	76 - 124
31528	Ag	EPA 6010	75	76 - 124
31528	Ba	EPA 6010	90	76 - 124
31528	Be	EPA 6010	96	76 - 124
31528	Cd	EPA 6010	85	76 - 124
31528	Cr	EPA 6010	91	76 - 124
31528	Cu	EPA 6010	88	76 - 124
31528	Ni	EPA 6010	86	76 - 124
31528	Pb	EPA 6010	91	76 - 124
31528	Sb	EPA 6010	79	76 - 124
31528	Zn	EPA 6010	88	76 - 124
31539	Tl	EPA 7841	114	76 - 124
31539	As	EPA 7060	49	76 - 124
31539	Se	EPA 7740	78	76 - 124
31540	Ag	EPA 6010	60	76 - 124
31540	Ba	EPA 6010	91	76 - 124
31540	Be	EPA 6010	66	76 - 124
31540	Cd	EPA 6010	133	76 - 124
31540	Cr	EPA 6010	120	76 - 124
31540	Ni	EPA 6010	110	76 - 124
31540	Pb	EPA 6010	91	76 - 124
31540	Sb	EPA 6010	76	76 - 124
31540	Zn	EPA 6010	91	76 - 124
31540	Cu	EPA 6010	72	76 - 124
32200	Ba	EPA 6010	90	76 - 124
32200	Cu	EPA 6010	77	76 - 124
32200	Ni	EPA 6010	84	76 - 124
32200	Zn	EPA 6010	82	76 - 124

Unspiked Sample Duplicate Information

Batch Number	Analyte	Method	Sample 1 RPD	Sample 2 RPD	RPD Range
31528	CN	EPA 9010	0	0	0 - 30
31559	%Moist	ASTM D 2216	7	28	0 - 40

Sample Batch Information  
Analysis : Ag, Ba, Be, Cd, Cr, Cu, Ni, Pb, Sb, Zn

Sample ID	Preparation			Preparation Notes	Analysis			Inst
	Tag	Date	Time By		Date	Time	By	
31510BLANK		08/08/97	0730 CJC	TRACE	08/08/97	1340	MLR	ICP2
31510LCS		08/08/97	0730 CJC	TRACE	08/08/97	1343	MLR	ICP2
31510LCSD		08/08/97	0730 CJC	TRACE	08/08/97	1346	MLR	ICP2
85575MS		08/08/97	0730 CJC	TRACE	08/08/97	1349	MLR	ICP2
85575MSD		08/08/97	0730 CJC	TRACE	08/08/97	1352	MLR	ICP2
85472PDS		08/08/97	0730 CJC	TRACE	08/08/97	1355	MLR	ICP2
85472DUP		08/08/97	0730 CJC	TRACE	08/08/97	1358	MLR	ICP2
85472		08/08/97	0730 CJC	TRACE	08/08/97	1405	MLR	ICP2
85553-16		08/08/97	0730 CJC	TRACE	08/08/97	1408	MLR	ICP2
85575		08/08/97	0730 CJC	TRACE	08/08/97	1402	MLR	ICP2
85615-1		08/08/97	0730 CJC	TRACE	08/08/97	1417	MLR	ICP2
85615-2		08/08/97	0730 CJC	TRACE	08/08/97	1421	MLR	ICP2
85615-3		08/08/97	0730 CJC	TRACE	08/08/97	1424	MLR	ICP2
85615-4		08/08/97	0730 CJC	TRACE	08/08/97	1427	MLR	ICP2
85615-5		08/08/97	0730 CJC	TRACE	08/08/97	1430	MLR	ICP2
85615-6		08/08/97	0730 CJC	TRACE	08/08/97	1433	MLR	ICP2
85656-1		08/08/97	0730 CJC	TRACE	08/08/97	1436	MLR	ICP2
85657-11		08/08/97	0730 CJC	TRACE	08/08/97	1439	MLR	ICP2
85657-12		08/08/97	0730 CJC	TRACE	08/08/97	1443	MLR	ICP2
85657-9		08/08/97	0730 CJC	TRACE	08/08/97	1459	MLR	IC.

## Sample Batch Information

Analysis : As, Tl, Se

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
31515BLANK	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
31515LCS	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
31515LCSD	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
85657-10MS	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
85657-10MSD	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
85657-11PDS	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
85657-11DUP	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
85559	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
85560	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
85564-1	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
85657-10	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
85657-11	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
85657-12	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
85657-9	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
85660	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
85659-11	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
85658-3	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
85658-2	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
85658-1	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
66-1	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
85666-2	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
85666-3	As	08/11/97	0615	MTK	D/D	08/12/97	1024	MCW	AA1
85609-1	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
85609-2	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
85700	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
85701-1	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
85702-1	As	08/11/97	0615	MTK		08/12/97	1024	MCW	AA1
31515BLANK	Tl	08/11/97	0615	MTK		08/12/97	1120	MCW	AA2
31515LCS	Tl	08/11/97	0615	MTK		08/12/97	1126	MCW	AA2
31515LCSD	Tl	08/11/97	0615	MTK		08/12/97	1132	MCW	AA2
85657-10MS	Tl	08/11/97	0615	MTK		08/12/97	1139	MCW	AA2
85657-10MSD	Tl	08/11/97	0615	MTK		08/12/97	1145	MCW	AA2
85657-11PDS	Tl	08/11/97	0615	MTK		08/12/97	1151	MCW	AA2
85657-11DUP	Tl	08/11/97	0615	MTK		08/12/97	1157	MCW	AA2
85657-10	Tl	08/11/97	0615	MTK		08/12/97	1203	MCW	AA2
85657-11	Tl	08/11/97	0615	MTK		08/12/97	1209	MCW	AA2
85657-12	Tl	08/11/97	0615	MTK		08/12/97	1215	MCW	AA2
85657-9	Tl	08/11/97	0615	MTK		08/12/97	1234	MCW	AA2
85666-1	Tl	08/11/97	0615	MTK		08/12/97	1240	MCW	AA2
85666-2	Tl	08/11/97	0615	MTK		08/12/97	1246	MCW	AA2
85666-3	Tl	08/11/97	0615	MTK	D/D	08/12/97	1252	MCW	AA2
85609-1	Tl	08/11/97	0615	MTK		08/12/97	1258	MCW	AA2
85609-2	Tl	08/11/97	0615	MTK		08/12/97	1305	MCW	AA2
31515BLANK	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
31515LCS	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
31515LCSD	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
85657-10MS	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
85657-10MSD	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1

Sample Batch Information  
Analysis : As, Tl, Se

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
85657-11PDS	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
85657-11DUP	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
85559	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
85560	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
85564-1	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
85657-10	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
85657-11	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
85657-12	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
85657-9	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
85660	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
85659-11	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
85658-3	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
85658-2	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
85658-1	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
85666-1	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
85666-2	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
85666-3	Se	08/11/97	0615	MTK	D/D	08/12/97	1334	MCW	AA1
85609-1	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
85609-2	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
85700	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
85701-1	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
85702-1	Se	08/11/97	0615	MTK		08/12/97	1334	MCW	AA1
31515BLANK	Cd	08/11/97	0615	MTK		08/13/97	0901	MCW	AA2
31515LCS	Cd	08/11/97	0615	MTK		08/13/97	0901	MCW	AA2
31515LCSD	Cd	08/11/97	0615	MTK		08/13/97	0901	MCW	AA2
85657-10MS	Cd	08/11/97	0615	MTK		08/13/97	0901	MCW	AA2
85657-10MSD	Cd	08/11/97	0615	MTK		08/13/97	0901	MCW	AA2
85657-11PDS	Cd	08/11/97	0615	MTK		08/13/97	0901	MCW	AA2
85657-11DUP	Cd	08/11/97	0615	MTK		08/13/97	0901	MCW	AA2
85657-10	Cd	08/11/97	0615	MTK		08/13/97	0901	MCW	AA2
85657-11	Cd	08/11/97	0615	MTK		08/13/97	0901	MCW	AA2
85660	Cd	08/11/97	0615	MTK		08/13/97	0901	MCW	AA2

Sample Batch Information  
Analysis : Ag, Ba, Be, Cd, Cr, Cu, Ni, Pb, Sb, Zn

Sample ID	Preparation			Preparation Notes	Analysis			Inst
	Tag	Date	Time By		Date	Time	By	
31518BLANK		08/11/97	0745 MTK	TRACE	08/11/97	1427	MLR	ICP2
31518LCS		08/11/97	0745 MTK	TRACE	08/11/97	1430	MLR	ICP2
31518LCSD		08/11/97	0745 MTK	TRACE	08/11/97	1434	MLR	ICP2
85742-3MS		08/11/97	0745 MTK	TRACE	08/11/97	1437	MLR	ICP2
85742-3MSD		08/11/97	0745 MTK	TRACE	08/11/97	1440	MLR	ICP2
85742-3PDS		08/11/97	0745 MTK	TRACE	08/11/97	1443	MLR	ICP2
85742-3DUP		08/11/97	0745 MTK	TRACE	08/11/97	1446	MLR	ICP2
85768-1		08/11/97	0745 MTK	TRACE	08/11/97	1452	MLR	ICP2
85768-2		08/11/97	0745 MTK	TRACE	08/11/97	1455	MLR	ICP2
85768-3		08/11/97	0745 MTK	TRACE	08/11/97	1505	MLR	ICP2
85657-10		08/11/97	0745 MTK	TRACE	08/11/97	1508	MLR	ICP2
85742-1		08/11/97	0745 MTK	TRACE	08/11/97	1511	MLR	ICP2
85742-3		08/11/97	0745 MTK	TRACE	08/11/97	1449	MLR	ICP2
85742-4		08/11/97	0745 MTK	TRACE	08/11/97	1514	MLR	ICP2
85778-1		08/11/97	0745 MTK	TRACE	08/11/97	1518	MLR	ICP2
85778-2		08/11/97	0745 MTK	TRACE	08/11/97	1521	MLR	ICP2
85778-3		08/11/97	0745 MTK	TRACE	08/11/97	1524	MLR	ICP2
85778-4		08/11/97	0745 MTK	TRACE	08/11/97	1527	MLR	ICP2
85778-5		08/11/97	0745 MTK	TRACE	08/11/97	1530	MLR	ICP2
85778-6		08/11/97	0745 MTK	TRACE	08/11/97	1533	MLR	ICP2



Sample Batch Information  
Analysis : Tl, Se, As

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
31527BLANK	Tl	08/12/97	0730	MTK		08/12/97	1410	MCW	AA2
31527LCS	Tl	08/12/97	0730	MTK		08/12/97	1416	MCW	AA2
31527LCSD	Tl	08/12/97	0730	MTK		08/12/97	1422	MCW	AA2
85657-3MS	Tl	08/12/97	0730	MTK		08/12/97	1428	MCW	AA2
85657-3MSD	Tl	08/12/97	0730	MTK		08/12/97	1435	MCW	AA2
85657-3PDS	Tl	08/12/97	0730	MTK		08/12/97	1441	MCW	AA2
85657-3DUP	Tl	08/12/97	0730	MTK		08/12/97	1447	MCW	AA2
85656-2	Tl	08/12/97	0730	MTK		08/12/97	1453	MCW	AA2
85657-13	Tl	08/12/97	0730	MTK		08/12/97	1459	MCW	AA2
85657-14	Tl	08/12/97	0730	MTK		08/12/97	1506	MCW	AA2
85657-15	Tl	08/12/97	0730	MTK		08/12/97	1524	MCW	AA2
85657-16	Tl	08/12/97	0730	MTK		08/12/97	1530	MCW	AA2
85657-17	Tl	08/12/97	0730	MTK		08/12/97	1536	MCW	AA2
85657-19	Tl	08/12/97	0730	MTK		08/12/97	1542	MCW	AA2
85657-2	Tl	08/12/97	0730	MTK		08/12/97	1549	MCW	AA2
85657-3	Tl	08/12/97	0730	MTK		08/12/97	1555	MCW	AA2
85657-4	Tl	08/12/97	0730	MTK		08/12/97	1601	MCW	AA2
85657-5	Tl	08/12/97	0730	MTK		08/12/97	1607	MCW	AA2
85657-6	Tl	08/12/97	0730	MTK		08/12/97	1625	MCW	AA2
85657-7	Tl	08/12/97	0730	MTK		08/12/97	1631	MCW	AA2
85657-8	Tl	08/12/97	0730	MTK		08/12/97	1637	MCW	AA2
31527BLANK	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
31527LCS	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
31527LCSD	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
85657-3MS	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
85657-3MSD	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
85657-3PDS	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
85657-3DUP	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
85656-2	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
85657-13	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
85657-14	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
85657-15	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
85657-16	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
85657-17	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
85657-19	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
85657-2	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
85657-3	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
85657-4	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
85657-5	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
85657-6	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
85657-7	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
85657-8	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
85659-1	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
85659-10	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
85659-2	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
85659-3	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
85659-4	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
S-BLK	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1

Sample Batch Information  
Analysis : Tl, Se, As

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
HPS 690703	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
HPS	Se	08/12/97	0730	MTK		08/13/97	0742	MCW	AA1
31527BLANK	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
31527LCS	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
31527LCSD	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
85657-3MS	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
85657-3MSD	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
85657-3PDS	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
85657-3DUP	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
85656-2	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
85657-13	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
85657-14	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
85657-15	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
85657-16	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
85657-17	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
85657-19	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
85657-2	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
85657-3	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
85657-4	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
85657-5	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
85657-6	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
85657-7	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
85657-8	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
85659-1	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
85659-10	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
85659-2	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
85659-3	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
85659-4	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
S-BLK	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
HPS 690703	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1
HPS	As	08/12/97	0730	MTK		08/13/97	1128	MCW	AA1

Sample Batch Information  
Analysis : Ag, Ba, Be, Cd, Cr, Cu, Ni, Pb, Sb, Zn

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
31528BLANK		08/12/97	0730	MTK	36	08/12/97	1046	MLR	ICP1
31528LCS		08/12/97	0730	MTK	36	08/12/97	1050	MLR	ICP1
31528LCSD		08/12/97	0730	MTK	36	08/12/97	1055	MLR	ICP1
85657-3MS		08/12/97	0730	MTK	36	08/12/97	1100	MLR	ICP1
85657-3MSD		08/12/97	0730	MTK	36	08/12/97	1104	MLR	ICP1
85657-3PDS		08/12/97	0730	MTK	36	08/12/97	1109	MLR	ICP1
85657-3DUP		08/12/97	0730	MTK	36	08/12/97	1114	MLR	ICP1
85742-5		08/12/97	0730	MTK	36	08/12/97	1123	MLR	ICP1
85656-2		08/12/97	0730	MTK	36	08/12/97	1127	MLR	ICP1
85657-13		08/12/97	0730	MTK	36	08/12/97	1141	MLR	ICP1
85657-14		08/12/97	0730	MTK	36	08/12/97	1146	MLR	ICP1
85657-15		08/12/97	0730	MTK	36	08/12/97	1151	MLR	ICP1
85657-16		08/12/97	0730	MTK	36	08/12/97	1155	MLR	ICP1
85657-17		08/12/97	0730	MTK	36	08/12/97	1200	MLR	ICP1
85657-19		08/12/97	0730	MTK	36	08/12/97	1205	MLR	ICP1
85657-2		08/12/97	0730	MTK	36	08/12/97	1209	MLR	ICP1
85657-3		08/12/97	0730	MTK	36	08/12/97	1118	MLR	ICP1
85657-4		08/12/97	0730	MTK	36	08/12/97	1214	MLR	ICP1
85657-5		08/12/97	0730	MTK	36	08/12/97	1218	MLR	ICP1
85657-6		08/12/97	0730	MTK	36	08/12/97	1223	MLR	ICP1
85657-7		08/12/97	0730	MTK	36	08/12/97	1236	MLR	ICP1
85657-8		08/12/97	0730	MTK	36	08/12/97	1241	MLR	ICP1
85785-10		08/12/97	0730	MTK	36	08/12/97	1245	MLR	ICP1
85785-11		08/12/97	0730	MTK	36	08/12/97	1250	MLR	ICP1
85785-12		08/12/97	0730	MTK	36	08/12/97	1254	MLR	ICP1
S-BLK		08/12/97	0730	MTK	36	08/12/97	1259	MLR	ICP1
HPS 690703		08/12/97	0730	MTK	36	08/12/97	1303	MLR	ICP1
HPS		08/12/97	0730	MTK	36	08/12/97	1308	MLR	ICP1

Sample Batch Information  
Analysis : Tl, As, Se

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
85657-18	Tl	08/14/97	0605	MTK		08/14/97	1514	MCW	AA2
85824-1	Tl	08/14/97	0605	MTK		08/14/97	1609	MCW	AA2
31539BLANK	Tl	08/14/97	0605	MTK		08/14/97	1430	MCW	AA2
31539LCS	Tl	08/14/97	0605	MTK		08/14/97	1437	MCW	AA2
31539LCSD	Tl	08/14/97	0605	MTK		08/14/97	1443	MCW	AA2
85657-18MS	Tl	08/14/97	0605	MTK		08/14/97	1449	MCW	AA2
85657-18MSD	Tl	08/14/97	0605	MTK		08/14/97	1455	MCW	AA2
85657-18PDS	Tl	08/14/97	0605	MTK		08/14/97	1501	MCW	AA2
85657-18DUP	Tl	08/14/97	0605	MTK		08/14/97	1508	MCW	AA2
85785-5	Tl	08/14/97	0605	MTK		08/14/97	1520	MCW	AA2
85785-6	Tl	08/14/97	0605	MTK		08/14/97	1539	MCW	AA2
85785-7	Tl	08/14/97	0605	MTK		08/14/97	1545	MCW	AA2
85785-8	Tl	08/14/97	0605	MTK		08/14/97	1551	MCW	AA2
85785-9	Tl	08/14/97	0605	MTK		08/14/97	1609	MCW	AA2
85657-18	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
85824-1	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
31539BLANK	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
31539LCS	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
31539LCSD	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
85657-18MS	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
85657-18MSD	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
85657-18PDS	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
85657-18DUP	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
85785-5	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
85785-6	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
85785-7	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
85785-8	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
85785-9	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
85657-18	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
85824-1	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
31539BLANK	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
31539LCS	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
31539LCSD	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
85657-18MS	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
85657-18MSD	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
85657-18PDS	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
85657-18DUP	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
85785-5	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
85785-6	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
85785-7	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
85785-8	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
85785-9	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1

Sample Batch Information  
Analysis : Ag, Ba, Be, Cd, Cr, Ni, Pb, Sb, Zn, Cu

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
85824-1		08/14/97	0605	MTK	TRACE	08/14/97	1120	MLR	ICP1
31540BLANK		08/14/97	0605	MTK	TRACE	08/14/97	1039	MLR	ICP1
31540LCS		08/14/97	0605	MTK	TRACE	08/14/97	1044	MLR	ICP1
31540LCSD		08/14/97	0605	MTK	TRACE	08/14/97	1048	MLR	ICP1
85657-18MS		08/14/97	0605	MTK	TRACE	08/14/97	1053	MLR	ICP1
85657-18MSD		08/14/97	0605	MTK	TRACE	08/14/97	1057	MLR	ICP1
85657-18PDS		08/14/97	0605	MTK	TRACE	08/14/97	1102	MLR	ICP1
85657-18DUP		08/14/97	0605	MTK	TRACE	08/14/97	1107	MLR	ICP1
85657-18		08/14/97	0605	MTK	TRACE	08/14/97	1111	MLR	ICP1
85785-6		08/14/97	0605	MTK	TRACE	08/14/97	1146	MLR	ICP1
85785-7		08/14/97	0605	MTK	TRACE	08/14/97	1150	MLR	ICP1
85785-8		08/14/97	0605	MTK	TRACE	08/14/97	1155	MLR	ICP1
85785-9		08/14/97	0605	MTK	TRACE	08/14/97	1159	MLR	ICP1
85864		08/14/97	0605	MTK	TRACE	08/14/97	1116	MLR	ICP1

Sample Batch Information  
Analysis : Hg

Sample ID	Preparation				Preparation Notes	Analysis			Inst
	Tag	Date	Time	By		Date	Time	By	
85559	HG	08/11/97	0740	FBS		08/11/97	1341	FBS	HG1
85560	HG	08/11/97	0740	FBS		08/11/97	1343	FBS	HG1
31846BLANK	HG	08/11/97	0740	FBS		08/11/97	1315	FBS	HG1
31846LCS	HG	08/11/97	0740	FBS		08/11/97	1317	FBS	HG1
31846LCSD	HG	08/11/97	0740	FBS		08/11/97	1320	FBS	HG1
85657-9MS	HG	08/11/97	0740	FBS		08/11/97	1322	FBS	HG1
85657-9MSD	HG	08/11/97	0740	FBS		08/11/97	1324	FBS	HG1
85657-11DUP	HG	08/11/97	0740	FBS		08/11/97	1400	FBS	HG1
85660	HG	08/11/97	0740	FBS		08/11/97	1346	FBS	HG1
85657-11	HG	08/11/97	0740	FBS		08/11/97	1331	FBS	HG1
85657-12	HG	08/11/97	0740	FBS		08/11/97	1334	FBS	HG1
85657-9	HG	08/11/97	0740	FBS		08/11/97	1327	FBS	HG1
85624-1	HG	08/11/97	0740	FBS		08/11/97	1348	FBS	HG1
85656-1	HG	08/11/97	0740	FBS		08/11/97	1351	FBS	HG1
85680-1	HG	08/11/97	0740	FBS		08/11/97	1353	FBS	HG1
85700	HG	08/11/97	0740	FBS		08/11/97	1355	FBS	HG1
85703	HG	08/11/97	0740	FBS		08/11/97	1358	FBS	HG1
85657-10	HG	08/11/97	0740	FBS		08/11/97	1329	FBS	HG1

Sample Batch Information  
Analysis : Hg

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
31847BLANK	HG	08/08/97	1900	MB		08/19/97	0807	FBS	HG1
31847LCS	HG	08/08/97	1900	MB		08/19/97	0810	FBS	HG1
31847LCSD	HG	08/08/97	1900	MB		08/19/97	0912	FBS	HG1
85657-3MS	HG	08/08/97	1900	MB	AKA 85657-2	08/19/97	0814	FBS	HG1
85657-3MSD	HG	08/08/97	1900	MB	AKA 85657-2	08/19/97	0817	FBS	HG1
85657-8DUP	HG	08/08/97	1900	MB		08/19/97	0919	FBS	HG1
85657-2	HG	08/08/97	1900	MB	85657-3 MS/MSD	08/19/97	0831	FBS	HG1
85657-3	HG	08/08/97	1900	MB	AKA 85657-2	08/19/97	0819	FBS	HG1
85657-4	HG	08/08/97	1900	MB		08/19/97	0838	FBS	HG1
85657-5	HG	08/08/97	1900	MB		08/19/97	0845	FBS	HG1
85657-6	HG	08/08/97	1900	MB		08/19/97	0858	FBS	HG1
85657-7	HG	08/08/97	1900	MB		08/19/97	0905	FBS	HG1
85657-8	HG	08/08/97	1900	MB		08/19/97	0912	FBS	HG1

Sample Batch Information  
Analysis : Hg

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
31848BLANK	HG	08/11/97	2115	MB		08/12/97	1115	FBS	HG1
31848LCS	HG	08/11/97	2115	MB		08/12/97	1117	FBS	HG1
31848LCSD	HG	08/11/97	2115	MB		08/12/97	1120	FBS	HG1
85657-18MS	HG	08/11/97	2115	MB		08/12/97	1122	FBS	HG1
85657-18MSD	HG	08/11/97	2115	MB		08/12/97	1125	FBS	HG1
85657-19DUP	HG	08/11/97	2115	MB		08/12/97	1255	FBS	HG1
85656-2	HG	08/11/97	2115	MB		08/12/97	1248	FBS	HG1
85657-13	HG	08/11/97	2115	MB		08/12/97	1139	FBS	HG1
85657-14	HG	08/11/97	2115	MB		08/12/97	1146	FBS	HG1
85657-15	HG	08/11/97	2115	MB		08/12/97	1153	FBS	HG1
85657-16	HG	08/11/97	2115	MB		08/12/97	1205	FBS	HG1
85657-17	HG	08/11/97	2115	MB	AKA 85657-18	08/12/97	1212	FBS	HG1
85657-18	HG	08/11/97	2115	MB	AKA 85657-17	08/12/97	1127	FBS	HG1
85657-19	HG	08/11/97	2115	MB		08/12/97	1220	FBS	HG1
85694	HG	08/11/97	2115	MB	D.W.	08/12/97	1234	FBS	HG1
85742-5	HG	08/11/97	2115	MB	D.W.	08/12/97	1241	FBS	HG1



Sample Batch Information  
Analysis : CN

Sample ID	Tag	Preparation			Preparation	Analysis			Inst
		Date	Time	By	Notes	Date	Time	By	
31928BLK		08/07/97	0720	ARS	MIDI-DIST	08/07/97	1015	ARS	GENE5
31928LCS		08/07/97	0720	ARS	MIDI-DIST	08/07/97	1015	ARS	GENE5
31928LCSD		08/07/97	0720	ARS	MIDI-DIST	08/07/97	1015	ARS	GENE5
85657-2MS		08/07/97	0720	ARS	AKA 85657-3A	08/07/97	1015	ARS	GENE5
85657-2MSD		08/07/97	0720	ARS	AKA 85657-3A	08/07/97	1015	ARS	GENE5
85657-17MS		08/07/97	0720	ARS	AKA 85657-18A	08/07/97	1015	ARS	GENE5
85657-17MSD		08/07/97	0720	ARS	AKA 85657-18A	08/07/97	1015	ARS	GENE5
85657-2		08/07/97	0720	ARS	MIDI-DIST	08/07/97	1015	ARS	GENE5
85657-17		08/07/97	0720	ARS	MIDI-DIST	08/07/97	1015	ARS	GENE5
85657-4		08/07/97	0720	ARS	MIDI-DIST	08/07/97	1015	ARS	GENE5
85657-5		08/07/97	0940	ARS	MIDI-DIST	08/07/97	1337	ARS	GENE5
31928CAL5		08/07/97	0940	ARS	MIDI-DIST	08/07/97	1337	ARS	GENE5
31928CAL15		08/07/97	0940	ARS	MIDI-DIST	08/07/97	1337	ARS	GENE5
85657-6		08/07/97	0940	ARS	MIDI-DIST	08/07/97	1337	ARS	GENE5
85657-7		08/07/97	0940	ARS	MIDI-DIST	08/07/97	1337	ARS	GENE5
85657-8		08/07/97	0940	ARS	MIDI-DIST	08/07/97	1337	ARS	GENE5
85657-13		08/07/97	0940	ARS	MIDI-DIST	08/07/97	1337	ARS	GENE5
85657-14		08/07/97	0940	ARS	MIDI-DIST	08/07/97	1337	ARS	GENE5
85657-15		08/07/97	0940	ARS	MIDI-DIST	08/07/97	1337	ARS	GENE5
85657-16		08/07/97	0940	ARS	MIDI-DIST	08/07/97	1337	ARS	GI
85657-9		08/07/97	1300	ARS	MIDI-DIST	08/07/97	1505	ARS	GENE5
85657-9DUP		08/07/97	1300	ARS	MIDI-DIST	08/07/97	1505	ARS	GENE5
85657-10		08/07/97	1300	ARS	MIDI-DIST	08/07/97	1505	ARS	GENE5
85657-10DUP		08/07/97	1300	ARS	MIDI-DIST	08/07/97	1505	ARS	GENE5
85657-11		08/07/97	1300	ARS	MIDI-DIST	08/07/97	1505	ARS	GENE5
85657-12		08/07/97	1300	ARS	MIDI-DIST	08/07/97	1505	ARS	GENE5
85657-19		08/07/97	1300	ARS	MIDI-DIST	08/07/97	1505	ARS	GENE5
31928LCS		08/07/97	1300	ARS	MIDI-DIST	08/07/97	1505	ARS	GENE5
31928LCSD		08/07/97	1300	ARS	MIDI-DIST	08/07/97	1505	ARS	GENE5
31928LCSDD		08/07/97	1300	ARS	MIDI-DIST	08/07/97	1505	ARS	GENE5

Sample Batch Information  
Analysis : %Moist

Sample ID	Tag	Preparation Date	Preparation Time By	Preparation Notes	Analysis Date	Analysis Time By	Inst
85687-2		/	/		08/10/97	1800 JK	
85687-3		/	/		08/10/97	1800 JK	
85687-4		/	/		08/10/97	1800 JK	
85687-5		/	/		08/10/97	1800 JK	
85687-6		/	/		08/10/97	1800 JK	
85687-7		/	/		08/10/97	1800 JK	
85687-8		/	/		08/10/97	1800 JK	
85687-13		/	/		08/10/97	1800 JK	
85687-14		/	/		08/10/97	1800 JK	
85687-15		/	/		08/10/97	1800 JK	
85687-16		/	/		08/10/97	1800 JK	
85687-17		/	/		08/10/97	1800 JK	
85687-18		/	/		08/10/97	1800 JK	
85687-19		/	/		08/10/97	1800 JK	
85687-18DUP		/	/		08/10/97	1800 JK	
85687-19DUP		/	/		08/10/97	1800 JK	

Sample Batch Information  
Analysis : Ba, Cu, Ni, Zn

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
32200BLANK		09/03/97	0735	MTK/KSP36		09/04/97	1203	MLR	ICP1
32200LCS		09/03/97	0735	MTK/KSP36		09/04/97	1207	MLR	ICP1
32200LCSD		09/03/97	0735	MTK/KSP36		09/04/97	1210	MLR	ICP1
86465-6MS		09/03/97	0735	MTK/KSP36		09/04/97	1214	MLR	ICP1
86465-6MSD		09/03/97	0735	MTK/KSP36		09/04/97	1218	MLR	ICP1
86465-6PDS		09/03/97	0735	MTK/KSP36		09/04/97	1222	MLR	ICP1
86465-6DUP		09/03/97	0735	MTK/KSP36		09/04/97	1226	MLR	ICP1
86465-6		09/03/97	0735	MTK/KSP36		09/04/97	1229	MLR	ICP1
86469-1		09/03/97	0735	MTK/KSP36		09/04/97	1233	MLR	ICP1
86471-10		09/03/97	0735	MTK/KSP36		09/04/97	1237	MLR	ICP1
86471-2		09/03/97	0735	MTK/KSP36		09/04/97	1249	MLR	ICP1
86471-4		09/03/97	0735	MTK/KSP36		09/04/97	1252	MLR	ICP1
86471-6		09/03/97	0735	MTK/KSP36		09/04/97	1256	MLR	ICP1
86471-8		09/03/97	0735	MTK/KSP36		09/04/97	1300	MLR	ICP1
S-BLK		09/03/97	0735	MTK/KSP36		09/04/97	1334	MLR	ICP1
HPS 690703		09/03/97	0735	MTK/KSP36		09/04/97	1337	MLR	ICP1
HPS		09/03/97	0735	MTK/KSP36		09/04/97	1340	MLR	ICP1
85657-2RR		09/03/97	0735	MTK/KSP36		09/04/97	1319	MLR	ICP1
85657-7RR		09/03/97	0735	MTK/KSP36		09/04/97	1323	MLR	ICP1
86466-1		09/03/97	0735	MTK/KSP36		09/04/97	1304	MLR	ICP1
86466-2		09/03/97	0735	MTK/KSP36		09/04/97	1308	MLR	ICP1
86466-3		09/03/97	0735	MTK/KSP36		09/04/97	1312	MLR	ICP1
86466-4		09/03/97	0735	MTK/KSP36		09/04/97	1315	MLR	ICP1



Project Number TF-0320.015

Project Location SLOSS B'HAM AL

Laboratory AS1

Sampler(s)/Affiliation J. HUGHES (EIN)

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID
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SAMPLE BOTTLE / CONTAINER DESCRIPTION

CPA 8260  
402 Gauss JAZZ

[illegible]

Sample Code: L  Liquid; S = Solid; A = Air

Total No. of Bottles/  
Containers

50

Relinquished by: [Signature] Organization: EM TAMPA Date 01/5/97 Time 1800 Seal Intact?  
Received by: \_\_\_\_\_ Organization: \_\_\_\_\_ Date 1/1 Time \_\_\_\_\_ Yes No N/A

Relinquished by: [Signature] Organization: \_\_\_\_\_ Date 1 / 1 / \_\_\_\_\_ Time \_\_\_\_\_ Seal Intact? \_\_\_\_\_  
Received by: [Signature] Organization: AST Date 8/16/19 Time 1130 ☒ Yes ☐ No ☐ N/A

Special Instructions/Remarks: ice, temp = 14°C, pH = 1 (metals) 12 (CN)

$$A = \mathbb{C} \cup \infty$$

B = Metals DIFA

$$C = 500$$

ASI Cooler 403

Delivery Method: ☐ In Person ☒ Common Carrier FedEx

☐ Lab Courier      ☐ Other \_\_\_\_\_

**SPE**

Project Number TFD320.015  
Project Location Stress, P'HAM AL  
Laboratory AS1  
Sampler(s)/Affiliation S. HUGHES / ESI

SAMPLE IDENTITY		Code	Date/Time Sampled	Lab ID	SAMPLE BOTTLE / CONTAINER DESCRIPTION										TOTAL	
970804-LD-38-TM001	L		8/4/97 1705		3	EPAB260 4oz Glass Jar									3	-1
970804-LD-38-SL0036 57	S		1400				1		1		1		1		4	-2
970804-LD-38-SL0036 57	S		1400				1		1		1		1		4	-3
970804-LD-38-SL0036 10-12	S		1430				1		1		1		1		4	-4
970804-LD-38-SL0026 10-12	S		1540				1		1		1		1		4	-5
970804-LD-38-SL0026 18-20	S		1615				1		1		1		1		4	-6
970804-LD-38-SL9036	S		-				1		1		1		1		4	-7
970804-LD-38-SL9026	S		8/1/97 -				1		1		1		1		4	-8
970805-LD-39-FB0001	L		8/5/97 1640		3										3	-9
970805-LD-39-EB0001	L		1655		3										3	-10
970805-LD-39-FB0001	L		1605		3										3	-11
970805-LD-23-EB0001	L		1620		3										3	-12
970805-LD-38-SL0027 (11-17)	S		800				1								1	-13
970805-LD-38-SL0027 (22-24)	S		815				1								1	-14
970805-LD-38-SL0034 (10-12)	S		815/97 1200				1								1	-15
Total No. of Bottles/Containers															46	

Sample Code: L = Liquid; S = Solid; A = Air

Relinquished by: <u>[Signature]</u>	Organization: <u>GEM (TAMPA)</u>	Date <u>8/5/97</u> Time <u>1800</u>	Seal Intact? Yes No N/A
Received by: <u>[Signature]</u>	Organization: <u>ASI</u>	Date <u>8/1/97</u> Time <u>1130</u>	Seal Intact? Yes No N/A

Special Instructions/Remarks: ice; temp = 4C; pH = 1 (metals) 12 (CN) broken containers (see attached)

Fed Ex #s 1342579722, 9731308614/623/632

AS1 cooler H 408

Delivery Method: ☐ In Person ☒ Common Carrier Fed Ex ☐ Lab Courier ☐ Other

SPECIFY

SPECIFY

Project Number T70320.015

Project Location Sross B'itam m

Laboratory Asi

Sampler(s)/Affiliation ETH ZÜRICH

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID
-----------------	------	----------------------	--------

### SAMPLE BOTTLE / CONTAINER DESCRIPTION

[illegible]

Sample Code: L = ~~Liquid~~; S = Solid; A = Air

Total No. of Bottles/  
Containers

10

Relinquished by: [Signature] Organization: SEI (TAMU)  
Received by: \_\_\_\_\_ Organization: \_\_\_\_\_

Date 8/5/97 Time 1800

Seal Intact?  
Yes No N/A

Relinquished by: \_\_\_\_\_ Organization: \_\_\_\_\_  
Received by: Wesley Wardell Organization: AST

Date 1/1 Time           
Date 8/6/97 Time 1130

Seal Intact?  
Yes No N/A

Special Instructions/Remarks: ice, temp = 6°C, pH = 1 (metals) 12 (Cu)

Delivery Method: ☐ In Person ☒ Common Carrier FEDEx

☐ Lab Courier      ☐ Other \_\_\_\_\_

SP<sub>1</sub>

Project Number TF0320.015  
Project Location Gross B'ham, AL  
Laboratory AS1  
Sampler(s)/Affiliation J. Huestes/Gim

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID
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EPA 8270  
 WATER ANALYSIS  
 PM + Ba  
 500ml

$\text{Pn} + \text{BaP} \rightarrow \text{Pn} + \text{BaP}$   
 $\text{Pn} + \text{BaP} \rightarrow \text{Pn} + \text{BaP}$   
 $\text{Pn} + \text{BaP} \rightarrow \text{Pn} + \text{BaP}$

Plastic	Monomer	Hydro Gas
ANON	ANON	CY

Handy  
CLAN OF  
LITERARY  
NATURAL

SAMPLE BOTTLE / CONTAINER DESCRIPTION

[illegible]

Sample Code: L = ~~Liquid~~; S = Solid; A = Air

Total No. of Bottles/  
Containers

15

Relinquished by:

**Organization:**

ES H TANDA

Date.

8/5/97 Time 1800

Time

1800

Seal Intact?

Received by:

Organization:

Date\_

11 Time

Yes No N/A

Relinquished by:

Organization:

Date..

Time

Seal Intact?

Yes No N/A

Special Instructions/Remarks:

**Delivery Method:**

☐ In Person

☒ Common Carrier

Feb 27

**SPECIFY**

☐ Lab Courier☐ Other

**SPECIFY**

Southport 95 0533





# SLOSS INDUSTRIES

## DATA VALIDATION CHECKLIST

PROJECT NAME  
PROJECT NUMBER  
SAMPLE  
IDENTIFICATION(S)

Sloss Industries			
TF320.015			
970806-LD-23-TB0001	970807-LD-38-SL0029 (15-17)	970808-LD-38-SL0034 (10-10)	
970806-LD-23-SL0022 (0-2)	970807-LD-38-SL0029 (19-21)	970808-LD-38-SL0037 (8-10)	
970806-LD-23-SL0023 (12-14)	970807-LD-38-SL0028 (8-10)a	970808-LD-38-SL0037 (4-6)	
970806-LD-23-SL0023 (24-26)	970807-LD-38-SL0030 (17-19)	970808-LD-38-SL0035 (10-12)	
970806-LD-23-SL0021 (20-22)	970807-LD-38-SL0028 (13-15)	970808-LD-38-SL0033 (11-13)	
970806-LD-23-SL0021 (14-16)	970808-LD-TB0002	970807-LD-39-EB0001	
970806-LD-23-SL9021	970808-LD-FB0002		
970807-LD-38-SL0030 (9-11)	970808-LD-EB0002		
970807-LD-38-SL0030 (17-19)	970808-LD-38-SL0027 (22-24)		
(a) Additional sample collected for MS/MSD			
August 6 through 8, 1997			
Joe Hughes and David Page			
Soil, Sludge/Waste			
Analytical Services, Inc.			
Cyanide (9010), PPT Metals, 8260, 8270			
Geraghty & Miller, Inc./Level II			
85785			
October 8, 1997			

SAMPLE DATE (S)  
SAMPLE TEAM  
SAMPLE MATRIX  
ANALYZING LABORATORY  
ANALYSES REQUESTED  
QA REPORTING LEVEL  
LABORATORY REPORT NO.  
VALIDATION DATE

## FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: *	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Sampling dates noted		X		X	
2. Sampling team indicated		X		X	
3. Sampling identification traceable to location collected		X		X	
4. Sample location		X		X	
5. Sample depth for soils		X		X	
6. Collection technique (bailer, pump, etc.)		X		X	
7. Field sample preparation techniques		X		X	
8. Sample type (grab, composite)		X		X	
9. Sample container type		X		X	
10. Preservation methods		X		X	
11. Chain-of-custody form completed		X		X	
12. Required analytical methods requested		X		X	
13. Field (water and soil) sample logs completed properly and signed		X		X	
14. Number and type of field QC samples collected (blanks, replicates, splits, etc.)		X		X <sup>(1)</sup>	
15. Field equipment calibration	X				X
16. Field equipment decontamination		X		X	
17. Sample shipping		X		X	
18. Laboratory task order		X		X	

\* Field sampling logs = water and/or soil/sediment sampling logs

## FIELD DATA PACKAGE DOCUMENTATION

### COMMENTS:

1) Field QC samples collected

Field Duplicate Pair      970806-LD-23-SL0021 (20-22) and 970806-LD-23-SL9021

MS/MSD                      970807-LD-38-SL0028 (8-10)

Blanks                      970806-LD-23-TB0001    Trip Blank  
                                  970808-LD-TB0002       Trip Blank  
                                  970808-LD-FB0002       Field Blank  
                                  970808-LD-EB0002       Equipment Blank  
                                  970807-LD-39-EB0001    Equipment Blank

Slipt with Guardian:      970808-LD-38-SL0037 (4-6) Reviewed under separate cover.

## ANALYTICAL DATA PACKAGE DOCUMENTATION GENERAL INFORMATION

ALL QA REPORTING LEVELS:	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Method of analysis		X		X	
4. Detection limits of analysis		X		X	
5. Master tracking list		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preparation/extraction date		X		X	
9. Sample analysis date		X		X	
10. Copy of chain-of-custody form signed by lab sample custodian		X		X	
11. Narrative summary of QA or sample problems provided		X		X	

QA - quality assurance

COMMENTS : No qualification was necessary.

All analytical data were reported as Geraghty & Miller Level II data deliverables

**INORGANIC ANALYSES  
TOTAL METALS METHODS**

QA REPORTING LEVEL II REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Holding times		X		X	
2. Detection limits		X		X	
3. Calibration curve standards	X				X
4. Initial calibration verification %R	X				X
5. Continuing calibration verification %R	X				X
6. Blanks					
A. Preparation and calibration blanks		X		X	
B. Equipment rinsate blanks		X		X	
C. Field blanks		X		X	
7. Interference check sample %R (ICP only)	X				X
8. Dilution check sample %R (ICP only)	X				X
9. Laboratory control sample %R		X		X	
10. Matrix spike %R		X		X	
11. Lab duplicate or MSD %R and RPD	X				X
12. LCS duplicate %R and RPD		X		X	
13. Post-digestion analytical spike (FAA only)		X		X	
14. Field duplicate comparison		X		X	
15. Total and dissolved metals comparison	X				X

%R - percent recovery

RPD - relative percent difference

MSD - matrix spike duplicate

ICP - inductively coupled plasma atomic emission spectroscopy

FAA - furnace atomic absorption

NA - not applicable or not analyzed

**COMMENTS:**

This section was completed for Priority Pollutant Metals. Sloss soil data were qualified for each of the corresponding analytical batches where MS/MSD and PDS recoveries did not meet the control limit criteria. All qualified soil analytical results are summarized in the attached Table.

Analytical Batch	Analyte
31528	Silver
31531	Silver, Cadmium
31532	Thallium
31539	Arsenic
31540	Beryllium, Cadmium, Copper

**INORGANIC ANALYSES  
WET CHEMISTRY METHODS**

QA REPORTING LEVEL II REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Holding times		X		X	
2. Detection limits		X		X	
3. Calibration curve standards	X				X
4. Initial calibration verification %R	X				X
5. Continuing calibration verification %R	X				X
6. Blanks					
A. Preparation and calibration blanks		X		X	
B. Equipment rinsate blanks		X		X	
C. Field blanks		X		X	
7. Laboratory control sample %R		X		X	
8. Matrix spike %R		X		X	
9. Lab duplicate or MSD %R and RPD		X		X	
10. LCS duplicate %R and RPD		X		X	
11. Field duplicate comparison	X				X

%R - percent recovery

LCS - laboratory control sample duplicate

RPD - relative percent difference

NA - not applicable or not analyzed

MSD - matrix spike duplicate

**COMMENTS:**

This section was completed for cyanide data. Performance was acceptable. No sample qualification was necessary.

**ORGANIC ANALYSES  
VOLATILE ORGANIC COMPOUNDS**

QA REPORTING LEVEL II REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
<b>GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)</b>					
1. Holding times		X		X	
2. Detection limits		X		X	
3. Blanks					
A. Water blanks (VOCs)		X		X	
B. Equipment rinsate blanks		X		X	
C. Field Blanks		X		X	
D. Trip blanks		X		X	
4. Instrument tune and performance check	X				X
5. Initial calibration RRFs and %RSDs	X				X
6. Continuing calibration RRFs and %Ds	X				X
7. Matrix spike (MS) %R		X		X	
8. Matrix spike duplicate (MSD) %R		X		X	
9. Sample specific lab duplicate (optional)	X				X
10. MS/MSD or lab duplicate precision (RPD)		X		X	
11. Reagent water spike (BS)		X		X	
12. Reagent water spike duplicate (BSD)		X		X	
13. BS/BSD precision (RPD)		X		X	
14. Laboratory control sample (optional)		X		X	
15. Surrogate spike recoveries		X		X	
16. Internal standard retention times and areas	X				X
17. Compound identification and quantitation					
A. Reconstructed ion chromatograms	X				X
B. Quantitation reports	X				X
18. TIC search (optional)	X				X
19. Field duplicate comparison	X				X

VOCs - volatile organic compounds

RRF - relative response factor

% RSD - percent relative standard deviation

%D - percent drift

%R - percent recovery

RPD - relative percent difference

BS - blank spike

BSD - blank spike duplicate

TIC - tentatively identified compound

COMMENTS: This section was completed for volatiles Method 8260. Performance was acceptable. No sample qualification was necessary.

**ORGANIC ANALYSES  
SEMIVOLATILE ORGANIC COMPOUNDS**

QA REPORTING LEVEL II REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
<b>GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)</b>					
1. Holding times					
A. Extraction holding time		X		X	
B. Analysis holding time		X		X	
2. Detection limits		X		X	
3. Blanks					
A. Water blanks		X		X	
B. Extraction blanks		X		X	
C. Equipment rinsate blanks		X		X	
D. Field Blanks		X		X	
4. Instrument tune and performance check	X				X
5. Initial calibration RRFs and %RSDs	X				X
6. Continuing calibration RRFs and %Ds	X				X
7. Matrix spike (MS) %R		X		X	
8. Matrix spike duplicate (MSD) %R		X		X	
9. Sample specific lab duplicate (optional)	X				X
10. MS/MSD or lab duplicate precision (RPD)		X		X	
11. Laboratory control sample (LCS)		X		X	
12. LCS duplicate (LCSD)		X		X	
13. LCS/LCSD precision (RPD)		X		X	
14. Surrogate spike recoveries		X		X <sup>(1)</sup>	
15. Internal standard retention times and areas	X				X
16. Compound identification and quantitation					
A. Reconstructed ion chromatograms	X				X
B. Quantitation reports	X				X
17. TIC search (optional)	X				X
18. Field duplicate comparison	X				X

SVOCs - semivolatile organic compounds

RRF - relative response factor

% RSD - percent relative standard deviation

%D - percent drift

%R - percent recovery

RPD - relative percent difference

TIC - tentatively identified compound

COMMENTS: This section was completed for semivolatile Method 8270. Performance was acceptable. No sample qualification was necessary.

A summary of qualified analytical results associated with this data set are presented in the attached table.

VALIDATION PERFORMED BY: Cynthia Arnold

SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_

**Summary of Qualitative Analytical Results  
for Soils, Sludges, and Waste  
ASI Data Package 85785  
Sloss Industries, Birmingham, AL**

F 1 of 2

G & M Sample LD.	Analyte	Concentration Detected	Qualifier	Reasons for Qualification
<i>ASI Laboratory Report No 85785</i>				
970806-LD-23-SL0021 (14-1)	Arsenic	3.6 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Beryllium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Cadmium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Copper	BDL	UJ	MS/MSD and PDS out of control limit criteria
* 970806-LD-23-SL9021	Arsenic	2.0 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Beryllium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Cadmium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Chromium	15 mg/Kg	UJ	Field duplicate result > +/- 2X PQL
* 970806-LD-23-SL0021 (20-2)	Arsenic	2.2 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Cadmium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Silver	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Chromium	9.3 mg/Kg	UJ	Field duplicate result > +/- 2X PQL
970806-LD-23-SL0022 (0-2)	Cadmium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Silver	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970806-LD-23-SL0023 (12-1)	Cadmium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Silver	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970806-LD-23-SL0023 (24-2)	Cadmium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Silver	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970807-LD-38-SL0028 (8-10)	Silver	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970807-LD-38-SL0028 (13-1)	Cadmium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Silver	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria

10/14/97



**Summary of Qualified Analytical Results  
for Soils, Sludges, and Waste  
ASI Data Package 85785  
Sloss Industries, Birmingham, AL**

G & M Sample I.D.	Analyte	Concentration Detected	Qualifier	Reasons for Qualification
<i>ASI Laboratory Report No 85785</i>				
970807-LD-38-SL0029 (15-1)	Silver	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970807-LD-38-SL0029 (19-2)	Silver	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970807-LD-38-SL0030 (9-11)	Arsenic	4.3 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Beryllium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Cadmium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Copper	BDL	UJ	MS/MSD and PDS out of control limit criteria
970807-LD-38-SL0030 (17-1)	Arsenic	5.1 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Beryllium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Cadmium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Copper	110 mg/Kg	J	MS/MSD and PDS out of control limit criteria
970808-LD-39-SL0033 (11-1)	Cadmium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Silver	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970808-LD-39-SL0035 (10-1)	Cadmium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Silver	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970808-LD-38-SL0037 (4-6)	Cadmium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Silver	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970808-LD-38-SL0037 (8-10)	Cadmium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Silver	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Thallium	BDL	UJ	MS/MSD and PDS out of control limit criteria

Notes:

U - Non-detect

\* Field Duplicate pair

UJ - Non-detected estimated

J - Estimated

R - Rejected

**ASI****ANALYTICAL SERVICES, INC.**

ENVIRONMENTAL MONITORING &amp; LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

9/15/97

**Master List  
ASI #85785**

Sample #	G&M ID	Analysis	Notes
85785-1	970806-LD-23-TB0001	8260	
85785-2	970806-LD-23-SL0022(0-2)	9010,8260,8270,Metals	
85785-3	970806-LD-23-SL0023(12-14)	9010,8260,8270,Metals	
85785-4	970806-LD-23-SL0023(24-26)	9010,8260,8270,Metals	
85785-5	970806-LD-23-SL0021(20-22)	9010,8260,8270,Metals	
85785-6	970806-LD-23-SL0021(14-16)	9010,8260,8270,Metals	
85785-7	970806-LD-23-SL9021	9010,8260,8270,Metals	
85785-8	970807-LD-38-SL0030(9-11)	9010,8260,8270,Metals	
85785-9	970807-LD-38-SL0030(17-19)	9010,8260,8270,Metals	
85785-10	970807-LD-38-SL0029(15-17)	9010,8260,8270,Metals	
85785-11	970807-LD-38-SL0029(19-21)	9010,8260,8270,Metals	
85785-12	970807-LD-38-SL0028(8-10)	9010,8260,8270,Metals	
85785-13	970807-LD-38-SL0028(8-10)MS/MSD	9010,8260,8270,Metals	
85785-14	970807-LD-38-SL0028(13-15)	9010,8260,8270,Metals	
85785-15	970808-LD-TB0002	8260	
85785-16	970808-LD-FB0002	9010,8260,8270,Metals	
85785-17	970808-LD-EB0002	9010,8260,8270, Metals	
85785-18	970808-LD-38-SL0027(22-24)	8260	
85785-19	970808-LD-38-SL0034(10-10)	8260	
85785-20	970808-LD-38-SL0037(8-10)	9010,8260,8270,Metals	
85785-21	970808-LD-38-SL0037(4-6)	9010,8260,8270,Metals	
85785-22	970808-LD-38-SL0035(10-12)	9010,8260,8270,Metals	
85785-23	970808-LD-38-SL0033(11-13)	9010,8260,8270,Metals	
85785-24	970807-LD-39-EB0001	9010,8260,8270,Metals	

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Page 1 of 1

A Unit of American Analytical Services, Inc.



# ANALYTICAL SERVICES, INC.

ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

12 September, 1997

## Case Narrative Report 85785

The samples were collected on 6-8 August, 1997 and received by ASI 8 August, 1997. Conditions of sample receipt were documented on the Chain of Custody and included paperwork. The samples were logged into the LIMS as report 85785 for the following analyses as per client request: Aqueous samples - BNA (EPA 8270), VOA (EPA 8260), Metals (EPA 6010, 7060, 7841, 7740, 7470), and CN (EPA 9010); Solid samples - BNA (EPA 8270), VOA (EPA 8260), Metals (EPA 6010, 7060, 7841, 7740, 7471), CN (EPA 9010), and Moisture (ASTM D 2216). All holding times for sample preparation and analysis were met.

BNA analysis (EPA 8270) for aqueous samples met all data quality objectives.

VOA analysis (EPA 8260) for aqueous samples met all data quality objectives.

Metals analysis (EPA 6010) for aqueous samples met all data quality objectives.

As analysis (EPA 7060) gave low MS/MSD/PDS. Tl analysis (EPA 7841) met all data quality objectives. Se analysis (EPA 7740) gave high MS/MSD/PDS/LCSRPD. All other quality controls were acceptable. Hg analysis (EPA 7470) met all data quality objectives.

CN analysis (EPA 9010) for aqueous samples met all data quality objectives.

BNA analysis (EPA 8270) for solid samples gave acceptable spike recoveries. Sample 85785-7 indicated matrix effect by low 2,4,6-Tribromophenol, which was confirmed by 85785-7DUP. Sample 85785-21 gave low 2-Fluorophenol, Phenol-d5, Nitrobenzene-d5, 2-Fluorobiphenyl, but all surrogates passed when that sample was re-extracted and reanalyzed.

VOA analysis (EPA 8260) for solid samples was split into three batches. All three batches met all data quality objectives.

Metals analysis (EPA 6010) for solid samples was split into three batches. Batch #31528 gave low MS/MSD for Ag and Sb and low PDS for Ag. Batch #31531 gave low MS/MSD/PDS for Ag and Cd and low MS/MSD for Sb. Batch #31540 gave low MSD/PDS for Ag, low MS/MSD/PDS for Be and Cu, high MS/PDS for Cd, and high MSRPD for Ag. All other quality controls were acceptable. As analysis (EPA 7060) was split into two batches. Both batches gave low MS/MSD and Batch #31539 gave low PDS. Tl analysis (EPA 7841) was split into two batches. Batch #31532 gave low MS/MSD/PDS. Batch #31539 met all data quality objectives. Se analysis (EPA 7740)

was split into two batches. Batch #31532 gave low MS/MSD. Batch #31539 gave low MS. Hg analysis (EPA 7471) met all data quality objectives.

CN analysis (EPA 9010) for solid samples met all data quality objectives.

Moisture analysis (ASTM D 2216) met all data quality objectives.

A handwritten signature in black ink, appearing to read "J E Martin". The signature is fluid and cursive, with the first letters of each word being capitalized and prominent.

for  
Roy-Keith Smith, PhD  
Quality Assurance Manager

## Geraghty &amp; Miller, Inc.

Project Name: Sloss Industries  
Project Number: TF0320.015

TEST	S85785_1	S85785_2	S85785_3	S85785_4
Sample ID :	970806-LD-23-TB0001	970806-LD-23-SL0022(0-2)	970806-LD-23-SL0023(12-14)	970806-LD-23-SL0023(24-26)
Moisture (%)		12.6	16.8	18.4
Cyanide	(ug/L)	(mg/kg)	(mg/kg)	(mg/kg)
Total Cyanide (CN)			0.31	
Metals	(ug/L)	(mg/kg)	(mg/kg)	(mg/kg)
Total Antimony (Sb)(EPA 6010A)				
Total Arsenic (As)(EPA 7060A)		5	3	6
Total Barium (Ba)(EPA 6010A)		25	14	76
Total Beryllium (Be)(EPA 6010A)				
Total Chromium (Cr)(EPA 6010A)		11		
Total Copper (Cu)(EPA 6010A)				
Total Lead (Pb)(EPA 6010A)		13		10
Total Nickel (Ni)(EPA 6010A)				9
Total Silver (Ag)(EPA 6010A)				
Total Zinc (Zn)(EPA 6010A)		41	32	70
Volatile Organics (EPA 8260A)	(ug/L)	(ug/kg)	(ug/kg)	(ug/kg)
Acid Extractable Organics (EPA 8270B)	(ug/L)	(ug/kg)	(ug/kg)	(ug/kg)
Base Neutral Extractable Organics (EPA 8270B)	(ug/L)	(ug/kg)	(ug/kg)	(ug/kg)

Project Name: Sloss Industries

Project Number: TF0320.015

TEST	S85785_5	S85785_6	S85785_7	S85785_8
Sample ID :	970806-LD-23-SL0021(20-22)	970806-LD-23-SL0021(14-16)	970806-LD-23-SL9021	970807-LD-38-SL0030(9-11)
Moisture (%)	33.1	31.0	35.3	14.6
Cyanide	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Total Cyanide (CN)	0.34	0.43	0.46	
Metals	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Total Antimony (Sb)(EPA 6010A)				
Total Arsenic (As)(EPA 7060A)	2.2	3.6	2.0	4.3
Total Barium (Ba)(EPA 6010A)	82	39	63	61
Total Beryllium (Be)(EPA 6010A)				
Total Chromium (Cr)(EPA 6010A)	9.3		15	9
Total Copper (Cu)(EPA 6010A)				
Total Lead (Pb)(EPA 6010A)				
Total Nickel (Ni)(EPA 6010A)	28		23	
Total Silver (Ag)(EPA 6010A)				
Total Zinc (Zn)(EPA 6010A)	63	41	54	54
Volatile Organics (EPA 8260A)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Acid Extractable Organics (EPA 8270B)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Base Neutral Extractable Organics (EPA 8270B)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)

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## Geraghty &amp; Miller, Inc.

Project Name: Sloss Industries

Project Number: TF0320.015

TEST	S85785_9	S85785_10	S85785_11	S85785_12
Sample ID :	970807-LD-38-SL0030(17-19)	970807-LD-38-SL0029(15-17)	970807-LD-38-SL0029(19-21)	970807-LD-38-SL0028(8-10)
Moisture (%)	25.2	25.3	25.4	25.8
Cyanide	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Total Cyanide (CN)				
Metals	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Total Antimony (Sb)(EPA 6010A)				9.7
Total Arsenic (As)(EPA 7060A)	5.1		2.1	3.1
Total Barium (Ba)(EPA 6010A)	130	70	130	19
Total Beryllium (Be)(EPA 6010A)			2.8	
Total Chromium (Cr)(EPA 6010A)	11	6.0	3.1	5.9
Total Copper (Cu)(EPA 6010A)	110	5.2	5.5	6.1
Total Lead (Pb)(EPA 6010A)		5.0		6.6
Total Nickel (Ni)(EPA 6010A)		5.4	24	8.9
Total Silver (Ag)(EPA 6010A)	7.6			
Total Zinc (Zn)(EPA 6010A)	190	47	79	31
Volatile Organics (EPA 8260A)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Acid Extractable Organics (EPA 8270B)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Base Neutral Extractable Organics (EPA 8270B)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)

## Geraghty &amp; Miller, Inc.

Project Name: Sloss Industries  
Project Number: TF0320.015

TEST	S85785_13	S85785_14	S85785_15	S85785_16	S85785_17
Sample ID :	970807-LD-38-SL0028(8-10)MS/MSD	970807-LD-38-SL0028(13-15)	970808-LD-TB0002	970808-LD-FB0002	970808-LD-EB0002
Moisture (%)	27.0	26.9			
Cyanide	(mg/kg)	(mg/kg)	(ug/L)	(ug/L)	(ug/L)
Total Cyanide (CN)	0.24				
Metals	(mg/kg)	(mg/kg)	(ug/L)	(ug/L)	(ug/L)
Total Antimony (Sb)(EPA 6010A)					
Total Arsenic (As)(EPA 7060A)		1.8			
Total Barium (Ba)(EPA 6010A)	49	120			
Total Beryllium (Be)(EPA 6010A)					
Total Chromium (Cr)(EPA 6010A)	9	10			
Total Copper (Cu)(EPA 6010A)					
Total Lead (Pb)(EPA 6010A)	18	36			
Total Nickel (Ni)(EPA 6010A)	44	23			
Total Silver (Ag)(EPA 6010A)					
Total Zinc (Zn)(EPA 6010A)	70	62			
Volatile Organics (EPA 8260A)	(ug/kg)	(ug/kg)	(ug/L)	(ug/L)	(ug/L)
Acid Extractable Organics (EPA 8270B)	(ug/kg)	(ug/kg)	(ug/L)	(ug/L)	(ug/L)
Base Neutral Extractable Organics (EPA 8270B)	(ug/kg)	(ug/kg)	(ug/L)	(ug/L)	(ug/L)



## Geraghty &amp; Miller, Inc.

Project Name: Sloss Industries

Project Number: TF0320.015

KT 12/18/97

TEST	S85785_18	S85785_19	S85785_20	S85785_21
Sample ID :	970808-LD-38-SL0027(22-24)	970808-LD-38-SL0034(10-10)	970808-LD-38-SL0037(8-10)	970808-LD-38-SL0037(4-6)
Moisture (%)	28.6	16.7	25.7	25.2
Cyanide	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Total Cyanide (CN)				
Metals	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Total Antimony (Sb)(EPA 6010A)				
Total Arsenic (As)(EPA 7060A)			3.5	2.0
Total Barium (Ba)(EPA 6010A)			94	2.4
Total Beryllium (Be)(EPA 6010A)				
Total Chromium (Cr)(EPA 6010A)			5.7	19
Total Copper (Cu)(EPA 6010A)				
Total Lead (Pb)(EPA 6010A)			11	9.4
Total Nickel (Ni)(EPA 6010A)			3.0	
Total Silver (Ag)(EPA 6010A)				
Total Zinc (Zn)(EPA 6010A)			63	10
Volatile Organics (EPA 8260A)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Acid Extractable Organics (EPA 8270B)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Base Neutral Extractable Organics (EPA 8270B)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)

Project Name: Sloss Industries

Project Number: TF0320.015

12/19/97

TEST	S85785_22	S85785_23	S85785_24
Sample ID :	970808-LD-39-SL0035(10-12)	970808-LD-39-SL0033(11-13)	970807-LD-39-EB0001
Moisture (%)	33.2	18.7	
Cyanide	(mg/kg)	(mg/kg)	(ug/L)
Total Cyanide (CN)		1.25	
Metals	(mg/kg)	(mg/kg)	(ug/L)
Total Antimony (Sb)(EPA 6010A)			
Total Arsenic (As)(EPA 7060A)	2.7	5.0	
Total Barium (Ba)(EPA 6010A)	130	420	
Total Beryllium (Be)(EPA 6010A)			
Total Chromium (Cr)(EPA 6010A)	11	10	
Total Copper (Cu)(EPA 6010A)		4.3	
Total Lead (Pb)(EPA 6010A)	7.9	9.3	
Total Nickel (Ni)(EPA 6010A)	9.3	22	
Total Silver (Ag)(EPA 6010A)			
Total Zinc (Zn)(EPA 6010A)	57	53	
Volatile Organics (EPA 8260A)	(ug/kg)	(ug/kg)	(ug/L)
Acid Extractable Organics (EPA 8270B)	(ug/kg)	(ug/kg)	(ug/L)
Base Neutral Extractable Organics (EPA 8270B)	(ug/kg)	(ug/kg)	(ug/L)



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85785-1

September 13, 1997

### Sample Description

Sloss Industries

Water, G & M Project #TF0320.015, 970806-LD-23-TB0001, 08/06/97, 8:30, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 826
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 826
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0520

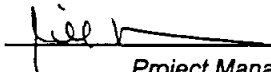
**Sample Description**

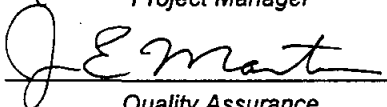
Sloss Industries

Water, G &amp; M Project #TF0320.015, 970806-LD-23-TB0001, 08/06/97, 8:30, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85785-2

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970806-LD-23-SL0022(0-2), 08/06/97, 7:40, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Moisture	12.6	0.05	%	1	
	Total Cyanide	BDL	0.2	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	5.7	mg/kg	1	EPA 6010A
7440382	Total Arsenic	4.6	1.1	mg/kg	1	EPA 7060A
7440393	Total Barium	25	1.1	mg/kg	1	EPA 601C
7440417	Total Beryllium	BDL	0.6	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.6	mg/kg	1	EPA 6010A
7440473	Total Chromium	11	1.1	mg/kg	1	EPA 6010A
7440508	Total Copper	BDL	2.3	mg/kg	1	EPA 6010A
7439921	Total Lead	13	2.9	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.29	mg/kg	1	EPA 7471
7440020	Total Nickel	BDL	2.3	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.6	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.1	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.6	mg/kg	1	EPA 7841
7440666	Total Zinc	41	2.3	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	57	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	57	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	57	ug/kg	1	EPA 8260A
71432	Benzene	BDL	6	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	11	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	11	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	11	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

05:22

Page 1 of 1

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970806-LD-23-SL0022(0-2), 08/06/97, 7:40, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	11	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	57	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	57	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	57	ug/kg	1	EPA 8260A
425	Styrene	BDL	6	ug/kg	1	EPA 8260A
345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	11	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	11	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	380	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	380	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	380	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	380	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	380	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2000	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2000	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	380	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	380	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	380	ug/kg	1	EPA 8270B
755	2-Nitrophenol	BDL	380	ug/kg	1	EPA 8270B
10027	4-Nitrophenol	BDL	2000	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	380	ug/kg	1	EPA 8270B
108952	Phenol	BDL	380	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0523

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970806-LD-23-SL0022(0-2), 08/06/97, 7:40, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	380	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	380	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2000	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	380	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	380	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	380	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	380	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	380	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	380	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	380	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	380	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	380	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	380	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	380	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	380	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	380	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	380	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	380	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	380	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	380	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	380	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	380	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	380	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	380	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	380	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	380	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	380	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2000	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	380	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	380	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	380	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	380	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	380	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	380	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	380	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	380	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	380	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	380	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	380	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	380	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	380	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	380	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	380	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	380	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	380	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

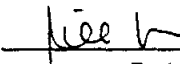
**Sample Description**

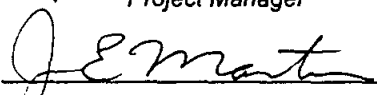
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970806-LD-23-SL0022(0-2), 08/06/97, 7:40, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	380	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	380	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	380	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	380	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	380	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	380	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	380	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	380	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance





# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85785-3

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970806-LD-23-SL0023(12-14), 08/06/97, 9:30, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	16.8	0.05	%	1	
57125	Total Cyanide	0.31	0.2	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.0	mg/kg	1	EPA 6010A
7440382	Total Arsenic	2.9	1.2	mg/kg	1	EPA 7060A
7440393	Total Barium	14	1.2	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.6	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.6	mg/kg	1	EPA 6010A
7440473	Total Chromium	BDL	1.2	mg/kg	1	EPA 6010A
7440508	Total Copper	BDL	2.4	mg/kg	1	EPA 6010A
7439921	Total Lead	BDL	3.0	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.30	mg/kg	1	EPA 7471
7440020	Total Nickel	BDL	2.4	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.8	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.2	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.8	mg/kg	1	EPA 7841
7440666	Total Zinc	32	2.4	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	60	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	60	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	60	ug/kg	1	EPA 8260A
71432	Benzene	BDL	6	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	12	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	12	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	12	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0526

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970806-LD-23-SL0023(12-14), 08/06/97, 9:30, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	12	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	60	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	60	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	60	ug/kg	1	EPA 8260A
100425	Styrene	BDL	6	ug/kg	1	EPA 8260A
100445	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	12	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	12	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	400	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	400	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	400	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	400	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	400	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2000	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2000	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
100755	2-Nitrophenol	BDL	400	ug/kg	1	EPA 8270B
10027	4-Nitrophenol	BDL	2000	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	400	ug/kg	1	EPA 8270B
108952	Phenol	BDL	400	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0527

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970806-LD-23-SL0023(12-14), 08/06/97, 9:30, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	400	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	400	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2000	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	400	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	400	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	400	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	400	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	400	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	400	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	400	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	400	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	400	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	400	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	400	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	400	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	400	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	400	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	400	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	400	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	400	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	400	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	400	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	400	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	400	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2000	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	400	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	400	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	400	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	400	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	400	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	400	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	400	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	400	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	400	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	400	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	400	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	400	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	400	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	400	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	400	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

0528

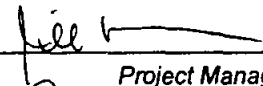
**Sample Description**

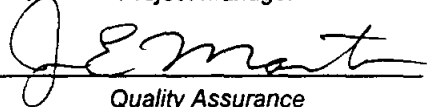
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970806-LD-23-SL0023(12-14), 08/06/97, 9:30, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	400	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	400	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	400	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	400	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	400	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	400	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	400	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance

**Laboratory Report**

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: **85785-4**

September 13, 1997

**Sample Description**

Sloss Industries

Soil, G & M Project #TF0320.015, 970806-LD-23-SL0023(24-26), 08/06/97, 10:20, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	18.4	0.05	%	1	
57125	Total Cyanide	BDL	0.3	mg/kg	1	EPA 9010A
<b>Priority Pollutant Metals</b>						
<b>Metals</b>						
7440360	Total Antimony	BDL	6.1	mg/kg	1	EPA 6010A
7440382	Total Arsenic	6.3	1.2	mg/kg	1	EPA 7060A
7440393	Total Barium	76	1.2	mg/kg	1	EPA 6010'
7440417	Total Beryllium	BDL	0.6	mg/kg	1	EPA 6010,
7440439	Total Cadmium	BDL	0.6	mg/kg	1	EPA 6010A
7440473	Total Chromium	BDL	1.2	mg/kg	1	EPA 6010A
7440508	Total Copper	BDL	2.5	mg/kg	1	EPA 6010A
7439921	Total Lead	10	3.1	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.31	mg/kg	1	EPA 7471
7440020	Total Nickel	8.8	2.5	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	5.0	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.2	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	5.0	mg/kg	1	EPA 7841
7440666	Total Zinc	70	2.5	mg/kg	1	EPA 6010A
<b>Volatile Organics (EPA 8260A)</b>						
67641	Acetone	BDL	61	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	61	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	61	ug/kg	1	EPA 8260A
71432	Benzene	BDL	6	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	12	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg	1	EPA 8260'
67663	Chloroform	BDL	6	ug/kg	1	EPA 826L
74873	Chloromethane	BDL	12	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	12	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0500

Page 1 of 4

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970806-LD-23-SL0023(24-26), 08/06/97, 10:20, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	12	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	61	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	61	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	61	ug/kg	1	EPA 8260A
10425	Styrene	BDL	6	ug/kg	1	EPA 8260A
19345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	12	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	12	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	400	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	400	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	400	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	400	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	400	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2100	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2100	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	400	ug/kg	1	EPA 8270B
755	2-Nitrophenol	BDL	400	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2100	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	400	ug/kg	1	EPA 8270B
108952	Phenol	BDL	400	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0531

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970806-LD-23-SL0023(24-26), 08/06/97, 10:20, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	400	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	400	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2100	ug/kg	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	400	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	400	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	400	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	400	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	400	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	400	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	400	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	400	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	400	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	400	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	400	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	400	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	400	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	400	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	400	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	400	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	400	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	400	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	400	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	400	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	400	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	400	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2100	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	400	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	400	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	400	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	400	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	400	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	400	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	400	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	400	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	400	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	400	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	400	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	400	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	400	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	400	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	400	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

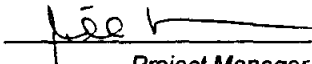
## Sample Description

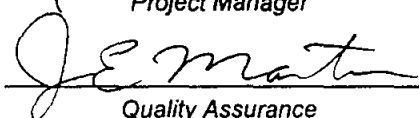
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970806-LD-23-SL0023(24-26), 08/06/97, 10:20, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	400	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	400	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	400	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	400	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	400	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	400	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	400	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	400	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance





# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85785-5

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970806-LD-23-SL0021(20-22), 08/06/97, 14:30, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	33.1	0.05	%	1	
57125	Total Cyanide	0.34	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	7.5	mg/kg	1	EPA 6010A
7440382	Total Arsenic	2.2	1.5	mg/kg	1	EPA 7060A
7440393	Total Barium	82	1.5	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.7	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.7	mg/kg	1	EPA 6010A
7440473	Total Chromium	9.3	1.5	mg/kg	1	EPA 6010A
7440508	Total Copper	BDL	3.0	mg/kg	1	EPA 6010A
7439921	Total Lead	BDL	3.7	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.37	mg/kg	1	EPA 7471
7440020	Total Nickel	28	3.0	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	6.0	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.5	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	6.0	mg/kg	1	EPA 7841
7440666	Total Zinc	63	3.0	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	75	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	75	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	75	ug/kg	1	EPA 8260A
71432	Benzene	BDL	7	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	7	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	7	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	15	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	7	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	7	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	7	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	7	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	7	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	15	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	15	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0534

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## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970806-LD-23-SL0021(20-22), 08/06/97, 14:30, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	7	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	15	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	75	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	75	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	7	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	75	ug/kg	1	EPA 8260A
425	Styrene	BDL	7	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg	1	EPA 8260A
108883	Toluene	BDL	7	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	15	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	15	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	490	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	490	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	490	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	490	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	490	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2500	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2500	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	490	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	490	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	490	ug/kg	1	EPA 8270B
55	2-Nitrophenol	BDL	490	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2500	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	490	ug/kg	1	EPA 8270B
108952	Phenol	BDL	490	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0535

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970806-LD-23-SL0021(20-22), 08/06/97, 14:30, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	490	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	490	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2500	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	490	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	490	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	490	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	490	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	490	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	490	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	490	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	490	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	490	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	490	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	490	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	490	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	490	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	490	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	490	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	490	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	490	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	490	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	490	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	490	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	490	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	490	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	490	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	490	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2500	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	490	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	490	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	490	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	490	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	490	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	490	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	490	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	490	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	490	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	490	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	490	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	490	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	490	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	490	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	490	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	490	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	490	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0536

Page 2 of 4

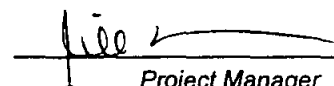
**Sample Description**

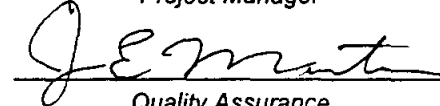
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970806-LD-23-SL0021(20-22), 08/06/97, 14:30, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	490	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	490	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	490	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	490	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	490	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	490	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	490	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	490	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85785-6

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970806-LD-23-SL0021(14-16), 08/06/97, 14:45, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Moisture	31.0	0.05	%	1	
	Total Cyanide	0.43	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	7.2	mg/kg	1	EPA 6010A
7440382	Total Arsenic	3.6	1.4	mg/kg	1	EPA 7060A
7440393	Total Barium	39	1.4	mg/kg	1	EPA 6010
7440417	Total Beryllium	BDL	0.7	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.7	mg/kg	1	EPA 6010A
7440473	Total Chromium	BDL	1.4	mg/kg	1	EPA 6010A
7440508	Total Copper	BDL	2.9	mg/kg	1	EPA 6010A
7439921	Total Lead	BDL	3.6	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.36	mg/kg	1	EPA 7471
7440020	Total Nickel	BDL	2.9	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	5.8	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.4	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	5.8	mg/kg	1	EPA 7841
7440666	Total Zinc	41	2.9	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	72	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	72	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	72	ug/kg	1	EPA 8260A
71432	Benzene	BDL	7	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	7	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	7	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	14	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	7	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	7	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	7	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	7	ug/kg	1	EPA 826C
67663	Chloroform	BDL	7	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	14	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	14	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

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## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970806-LD-23-SL0021(14-16), 08/06/97, 14:45, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	7	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	14	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	72	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	72	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	7	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	72	ug/kg	1	EPA 8260A
3425	Styrene	BDL	7	ug/kg	1	EPA 8260A
19345	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg	1	EPA 8260A
108883	Toluene	BDL	7	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	14	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	14	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	480	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	480	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	480	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	480	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	480	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2500	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2500	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	480	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	480	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	480	ug/kg	1	EPA 8270B
755	2-Nitrophenol	BDL	480	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2500	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	480	ug/kg	1	EPA 8270B
108952	Phenol	BDL	480	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970806-LD-23-SL0021(14-16), 08/06/97, 14:45, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	480	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	480	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2500	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	480	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	480	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	480	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	480	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	480	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	480	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	480	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	480	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	480	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	480	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	480	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	480	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	480	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	480	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	480	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	480	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	480	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	480	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	480	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	480	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	480	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	480	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	480	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	480	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2500	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	480	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	480	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	480	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	480	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	480	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	480	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	480	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	480	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	480	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	480	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	480	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	480	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	480	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	480	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	480	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	480	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	480	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

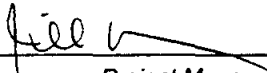
**Sample Description**

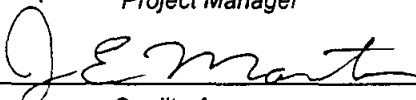
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970806-LD-23-SL0021(14-16), 08/06/97, 14:45, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	480	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	480	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	480	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	480	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	480	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	480	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	480	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	480	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance





# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85785-7

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970806-LD-23-SL9021, 08/06/97,, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	35.3	0.05	%	1	
57125	Total Cyanide	0.46	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	7.7	mg/kg	1	EPA 6010A
7440382	Total Arsenic	2.0	1.5	mg/kg	1	EPA 7060A
7440393	Total Barium	63	1.5	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.8	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.8	mg/kg	1	EPA 6010A
7440473	Total Chromium	15	1.5	mg/kg	1	EPA 6010A
7440508	Total Copper	BDL	3.1	mg/kg	1	EPA 6010A
7439921	Total Lead	BDL	3.9	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.39	mg/kg	1	EPA 7471
7440020	Total Nickel	23	3.1	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	6.2	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.5	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	6.2	mg/kg	1	EPA 7841
7440666	Total Zinc	54	3.1	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	77	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	77	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	77	ug/kg	1	EPA 8260A
71432	Benzene	BDL	8	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	8	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	8	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	15	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	8	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	8	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	8	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	8	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	8	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	15	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	15	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

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## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970806-LD-23-SL9021, 08/06/97,, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	8	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	8	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	8	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	15	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	8	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	8	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	8	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	8	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	8	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	8	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	8	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	8	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	8	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	8	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	77	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	8	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	77	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	8	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	77	ug/kg	1	EPA 8260A
100425	Styrene	BDL	8	ug/kg	1	EPA 8260A
100345	1,1,2,2-Tetrachloroethane	BDL	8	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	8	ug/kg	1	EPA 8260A
108883	Toluene	BDL	8	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	8	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	8	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	8	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	8	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	8	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	15	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	15	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	8	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	510	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	510	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	510	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	510	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	510	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2600	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2600	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	510	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	510	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	510	ug/kg	1	EPA 8270B
100755	2-Nitrophenol	BDL	510	ug/kg	1	EPA 8270B
1007027	4-Nitrophenol	BDL	2600	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	510	ug/kg	1	EPA 8270B
108952	Phenol	BDL	510	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970806-LD-23-SL9021, 08/06/97,, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	510	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	510	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2600	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	510	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	510	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	510	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	510	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	510	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	510	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	510	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	510	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	510	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	510	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	510	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	510	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	510	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	510	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	510	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	510	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	510	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	510	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	510	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	510	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	510	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	510	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	510	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	510	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2600	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	510	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	510	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	510	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	510	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	510	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	510	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	510	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	510	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	510	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	510	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	510	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	510	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	510	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	510	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	510	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	510	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	510	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

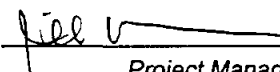
**Sample Description**

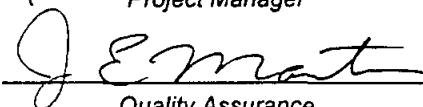
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970806-LD-23-SL9021, 08/06/97,, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	510	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	510	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	510	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	510	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	510	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	510	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	510	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	510	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85785-8

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970807-LD-38-SL0030(9-11), 08/07/97, 9:15, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	14.6	0.05	%	1	
57125	Total Cyanide	BDL	0.2	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	5.9	mg/kg	1	EPA 6010A
7440382	Total Arsenic	4.3	1.2	mg/kg	1	EPA 7060A
7440393	Total Barium	61	1.2	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.6	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.6	mg/kg	1	EPA 6010A
7440473	Total Chromium	9.4	1.2	mg/kg	1	EPA 6010A
7440508	Total Copper	BDL	2.3	mg/kg	1	EPA 6010A
7439921	Total Lead	BDL	2.9	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.29	mg/kg	1	EPA 7471
7440020	Total Nickel	BDL	2.3	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.7	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.2	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.7	mg/kg	1	EPA 7841
7440666	Total Zinc	54	2.3	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	59	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	59	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	59	ug/kg	1	EPA 8260A
71432	Benzene	BDL	6	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	12	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	12	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	12	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0546

Page 1 of 4

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970807-LD-38-SL0030(9-11), 08/07/97, 9:15, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	12	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	59	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	59	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	59	ug/kg	1	EPA 8260A
425	Styrene	BDL	6	ug/kg	1	EPA 8260A
12345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	12	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	12	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	390	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	390	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	390	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	390	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	390	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2000	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2000	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	390	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	390	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	390	ug/kg	1	EPA 8270B
755	2-Nitrophenol	BDL	390	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2000	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	390	ug/kg	1	EPA 8270B
108952	Phenol	BDL	390	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

## Sample Description

Gloss Industries

Soil, G &amp; M Project #TF0320.015, 970807-LD-38-SL0030(9-11), 08/07/97, 9:15, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	390	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	390	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2000	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	390	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	390	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	390	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	390	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	390	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	390	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	390	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	390	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	390	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	390	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	390	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	390	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	390	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	390	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	390	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	390	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	390	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	390	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	390	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	390	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	390	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	390	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	390	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	390	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2000	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	390	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	390	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	390	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	390	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	390	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	390	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	390	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	390	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	390	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	390	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	390	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	390	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	390	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	390	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	390	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	390	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	390	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

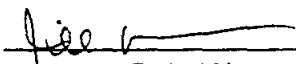
**Sample Description**

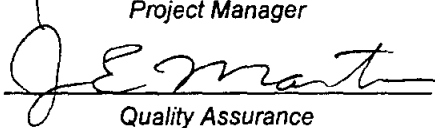
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970807-LD-38-SL0030(9-11), 08/07/97, 9:15, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	390	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	390	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	390	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	390	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	390	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	390	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	390	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	390	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance





# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85785-9

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970807-LD-38-SL0030(17-19), 08/07/97, 10:00, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Moisture	25.2	0.05	%	1	
	Total Cyanide	BDL	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.7	mg/kg	1	EPA 6010A
7440382	Total Arsenic	5.1	1.3	mg/kg	1	EPA 7060A
7440393	Total Barium	130	1.3	mg/kg	1	EPA 6010
7440417	Total Beryllium	BDL	0.8	mg/kg	1	EPA 6010
7440439	Total Cadmium	BDL	0.8	mg/kg	1	EPA 6010A
7440473	Total Chromium	11	1.32	mg/kg	1	EPA 6010A
7440508	Total Copper	110	2.7	mg/kg	1	EPA 6010A
7439921	Total Lead	BDL	3.3	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.33	mg/kg	1	EPA 7471
7440020	Total Nickel	BDL	2.7	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	5.3	mg/kg	1	EPA 7740
7440224	Total Silver	7.6	1.3	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	5.3	mg/kg	1	EPA 7841
7440666	Total Zinc	190	2.7	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	67	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	67	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	67	ug/kg	1	EPA 8260A
71432	Benzene	BDL	7	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	7	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	7	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	13	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	7	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	7	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	7	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	7	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	7	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	13	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	13	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0550

Page 1 of 4

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970807-LD-38-SL0030(17-19), 08/07/97, 10:00, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	7	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	13	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	67	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	67	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	7	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	67	ug/kg	1	EPA 8260A
1425	Styrene	BDL	7	ug/kg	1	EPA 8260A
19345	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg	1	EPA 8260A
108883	Toluene	BDL	7	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	13	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	13	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	440	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	440	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	440	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	440	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	440	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	440	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	440	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	440	ug/kg	1	EPA 8270B
755	2-Nitrophenol	BDL	440	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2300	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	440	ug/kg	1	EPA 8270B
108952	Phenol	BDL	440	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0551

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970807-LD-38-SL0030(17-19), 08/07/97, 10:00, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	440	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	440	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2300	ug/kg	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	440	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	440	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	440	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	440	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	440	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	440	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	440	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	440	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	440	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	440	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	440	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	440	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	440	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	440	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	440	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	440	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	440	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	440	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	440	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	440	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	440	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	440	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	440	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	440	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2300	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	440	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	440	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	440	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	440	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	440	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	440	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	440	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	440	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	440	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	440	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	440	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	440	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	440	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	440	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	440	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	440	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	440	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0552

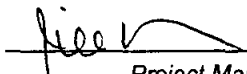
**Sample Description**

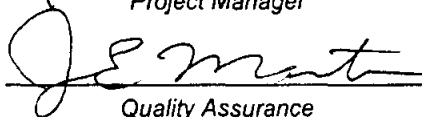
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970807-LD-38-SL0030(17-19), 08/07/97, 10:00, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	440	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	440	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	440	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	440	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	440	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	440	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	440	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	440	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 85785-10

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970807-LD-38-SL0029(15-17), 08/07/97, 12:20, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	25.3	0.05	%	1	
57125	Total Cyanide	BDL	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.7	mg/kg	1	EPA 6010A
7440382	Total Arsenic	BDL	1.3	mg/kg	1	EPA 7060A
7440393	Total Barium	70	1.3	mg/kg	1	EPA 601C
7440417	Total Beryllium	BDL	0.7	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.7	mg/kg	1	EPA 6010A
7440473	Total Chromium	6.0	1.3	mg/kg	1	EPA 6010A
7440508	Total Copper	5.2	2.7	mg/kg	1	EPA 6010A
7439921	Total Lead	5.0	3.3	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.33	mg/kg	1	EPA 7471
7440020	Total Nickel	5.4	2.7	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	5.4	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.3	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	5.4	mg/kg	1	EPA 7841
7440666	Total Zinc	47	2.7	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	67	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	67	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	67	ug/kg	1	EPA 8260A
71432	Benzene	BDL	7	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	7	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	7	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	13	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	7	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	7	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	7	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	7	ug/kg	1	EPA 826C
67663	Chloroform	BDL	7	ug/kg	1	EPA 826G
74873	Chloromethane	BDL	13	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	13	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0554

Page 1 of 4

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970807-LD-38-SL0029(15-17), 08/07/97, 12:20, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	7	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	13	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	67	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	67	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	7	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	67	ug/kg	1	EPA 8260A
425	Styrene	BDL	7	ug/kg	1	EPA 8260A
10045	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg	1	EPA 8260A
108883	Toluene	BDL	7	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	13	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	13	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	440	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	440	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	440	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	440	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	440	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	440	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	440	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	440	ug/kg	1	EPA 8270B
755	2-Nitrophenol	BDL	440	ug/kg	1	EPA 8270B
1027	4-Nitrophenol	BDL	2300	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	440	ug/kg	1	EPA 8270B
108952	Phenol	BDL	440	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0555

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970807-LD-38-SL0029(15-17), 08/07/97, 12:20, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	440	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	440	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2300	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	440	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	440	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	440	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	440	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	440	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	440	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	440	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	440	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	440	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	440	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	440	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	440	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	440	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	440	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	440	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	440	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	440	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	440	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	440	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	440	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	440	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	440	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	440	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	440	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2300	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	440	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	440	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	440	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	440	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	440	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	440	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	440	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	440	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	440	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	440	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	440	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	440	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	440	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	440	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	440	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	440	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	440	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

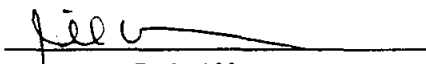
## Sample Description


Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970807-LD-38-SL0029(15-17), 08/07/97, 12:20, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	440	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	440	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	440	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	440	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	440	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	440	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	440	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	440	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance





# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85785-11

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970807-LD-38-SL0029(19-21), 08/07/97, 12:30, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	25.4	0.05	%	1	
57125	Total Cyanide	BDL	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.7	mg/kg	1	EPA 6010A
7440382	Total Arsenic	2.1	1.3	mg/kg	1	EPA 7060A
7440393	Total Barium	130	1.3	mg/kg	1	EPA 6010A
7440417	Total Beryllium	2.8	0.7	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.7	mg/kg	1	EPA 6010A
7440473	Total Chromium	3.1	1.3	mg/kg	1	EPA 6010A
7440508	Total Copper	5.5	2.7	mg/kg	1	EPA 6010A
7439921	Total Lead	BDL	3.4	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.34	mg/kg	1	EPA 7471
7440020	Total Nickel	24	2.7	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	5.4	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.3	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	5.4	mg/kg	1	EPA 7841
7440666	Total Zinc	79	2.7	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	67	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	67	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	67	ug/kg	1	EPA 8260A
71432	Benzene	BDL	7	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	7	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	7	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	13	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	7	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	7	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	7	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	7	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	7	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	13	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	13	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0558

Page 1 of 4

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970807-LD-38-SL0029(19-21), 08/07/97, 12:30, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	7	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	13	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	67	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	67	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	7	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	67	ug/kg	1	EPA 8260A
100125	Styrene	BDL	7	ug/kg	1	EPA 8260A
100345	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg	1	EPA 8260A
108883	Toluene	BDL	7	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	13	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	13	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	440	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	440	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	440	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	440	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	440	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	440	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	440	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	440	ug/kg	1	EPA 8270B
100755	2-Nitrophenol	BDL	440	ug/kg	1	EPA 8270B
10027	4-Nitrophenol	BDL	2300	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	440	ug/kg	1	EPA 8270B
108952	Phenol	BDL	440	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0559

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970807-LD-38-SL0029(19-21), 08/07/97, 12:30, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	440	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	440	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2300	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	440	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	440	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	440	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	440	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	440	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	440	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	440	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	440	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	440	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	440	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	440	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	440	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	440	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	440	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	440	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	440	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	440	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	440	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	440	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	440	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	440	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	440	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	440	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	440	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2300	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	440	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	440	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	440	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	440	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	440	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	440	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	440	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	440	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	440	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	440	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	440	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	440	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	440	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	440	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	440	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	440	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	440	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0560

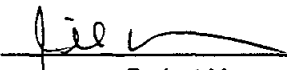
**Sample Description**

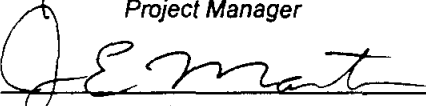
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970807-LD-38-SL0029(19-21), 08/07/97, 12:30, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	440	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	440	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	440	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	440	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	440	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	440	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	440	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	440	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85785-12

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970807-LD-38-SL0028(8-10), 08/07/97, 14:20, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	25.8	0.05	%	1	ASTM D 2216
57125	Total Cyanide	BDL	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	9.6	6.7	mg/kg	1	EPA 6010A
7440382	Total Arsenic	BDL	1.3	mg/kg	1	EPA 7060A
7440393	Total Barium	19	1.3	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.6	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.6	mg/kg	1	EPA 6010A
7440473	Total Chromium	15	1.3	mg/kg	1	EPA 6010A
7440508	Total Copper	6.1	2.7	mg/kg	1	EPA 6010A
7439921	Total Lead	7.9	3.4	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.34	mg/kg	1	EPA 7471
7440020	Total Nickel	BDL	2.7	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	5.4	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.3	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	5.4	mg/kg	1	EPA 7841
7440666	Total Zinc	31	2.7	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	67	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	67	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	67	ug/kg	1	EPA 8260A
71432	Benzene	BDL	7	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	7	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	7	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	13	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	7	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	7	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	7	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	7	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	7	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	13	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	13	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0562

Page 1 of 4

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970807-LD-38-SL0028(8-10), 08/07/97, 14:20, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	7	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	13	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	67	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	67	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	7	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	67	ug/kg	1	EPA 8260A
425	Styrene	BDL	7	ug/kg	1	EPA 8260A
13345	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg	1	EPA 8260A
108883	Toluene	BDL	7	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	13	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	13	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	450	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	450	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	450	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	450	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	450	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	450	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	450	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	450	ug/kg	1	EPA 8270B
55	2-Nitrophenol	BDL	450	ug/kg	1	EPA 8270B
10027	4-Nitrophenol	BDL	2300	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	450	ug/kg	1	EPA 8270B
108952	Phenol	BDL	450	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0563

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970807-LD-38-SL0028(8-10), 08/07/97, 14:20, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	450	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	450	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2300	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	450	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	450	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	450	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	450	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	450	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	450	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	450	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	450	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	450	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	450	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	450	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	450	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	450	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	450	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	450	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	450	ug/kg	1	EPA 827
7005723	4-Chlorophenyl phenyl ether	BDL	450	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	450	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	450	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	450	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	450	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	450	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	450	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	450	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2300	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	450	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	450	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	450	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	450	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	450	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	450	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	450	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	450	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	450	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	450	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	450	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	450	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	450	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	450	ug/kg	1	EPA 827
91203	Naphthalene	BDL	450	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	450	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	450	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0564

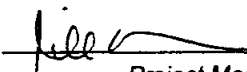
## Sample Description

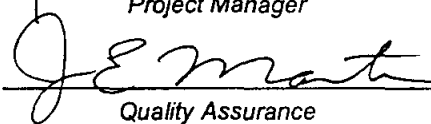
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970807-LD-38-SL0028(8-10), 08/07/97, 14:20, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	450	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	450	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	450	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	450	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	450	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	450	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	450	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	450	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance





# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85785-13

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970807-LD-38-SL0028(8-10)MS, 08/07/97, 14:20, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	0.2	0.2	mg/kg	1	EPA 9010A
<b>Priority Pollutant Metals</b>						
<b>Metals</b>						
7440360	Total Antimony	110	5.0	mg/kg	1	EPA 6010A
7440382	Total Arsenic	142	1.0	mg/kg	1	EPA 7060A
7440393	Total Barium	850	1.0	mg/kg	1	EPA 6010A
7440417	Total Beryllium	100	0.5	mg/kg	1	EPA 601
7440439	Total Cadmium	34	0.5	mg/kg	1	EPA 601
7440473	Total Chromium	92	1.0	mg/kg	1	EPA 6010A
7440508	Total Copper	92	2.0	mg/kg	1	EPA 6010A
7439921	Total Lead	410	2.5	mg/kg	1	EPA 6010A
7439976	Total Mercury	2.02	0.25	mg/kg	1	EPA 7471
7440020	Total Nickel	220	2.0	mg/kg	1	EPA 6010A
7782492	Total Selenium	136	4.0	mg/kg	1	EPA 7740
7440224	Total Silver	32	1.0	mg/kg	1	EPA 6010A
7440280	Total Thallium	120	4.0	mg/kg	1	EPA 7841
7440666	Total Zinc	230	2.0	mg/kg	1	EPA 6010A
<b>Volatile Organics (EPA 8260A)</b>						
67641	Acetone	BDL	50	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	50	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/kg	1	EPA 8260A
71432	Benzene	49	5	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	5	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/kg	1	EPA 8260A
108907	Chlorobenzene	49	5	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	5	ug/kg	1	EPA 826
74873	Chloromethane	BDL	10	ug/kg	1	EPA 82L
110758	2-Chloroethylvinyl ether	BDL	10	ug/kg	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

0566

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970807-LD-38-SL0028(8-10)MS, 08/07/97, 14:20, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	40	5	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/kg	1	EPA 8260A
100425	Styrene	BDL	5	ug/kg	1	EPA 8260A
145	1,1,2,2-Tetrachloroethane	BDL	5	ug/kg	1	EPA 8260A
1184	Tetrachloroethene	BDL	5	ug/kg	1	EPA 8260A
108883	Toluene	49	5	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79016	Trichloroethene	44	5	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	5	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	1700	330	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	1700	330	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	330	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	330	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	330	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	1700	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	1700	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	330	ug/kg	1	EPA 8270B
10027	4-Nitrophenol	2200	1700	ug/kg	1	EPA 8270B
1065	Pentachlorophenol	2600	330	ug/kg	1	EPA 8270B
108952	Phenol	1600	330	ug/kg	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	330	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

0567

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970807-LD-38-SL0028(8-10)MS, 08/07/97, 14:20, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	330	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	1700	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	960	330	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	330	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	330	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	330	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	330	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	330	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	330	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	330	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	330	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	330	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	330	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	330	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	330	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	330	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	330	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	330	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	330	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	330	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	330	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	330	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	330	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	760	330	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	1700	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	330	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	330	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	1200	330	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	330	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	330	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	330	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	330	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	330	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	330	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	330	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	330	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	330	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	330	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	330	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	330	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B
100016	4-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

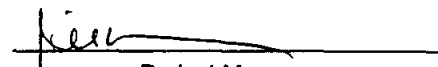
**Sample Description**

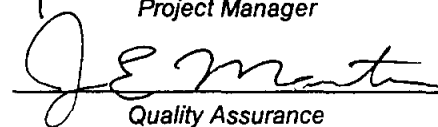
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970807-LD-38-SL0028(8-10)MS, 08/07/97, 14:20, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	330	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	330	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	930	330	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	330	ug/kg	1	EPA 8270B
129000	Pyrene	1300	330	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	330	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	880	330	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 85785-14

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970807-LD-38-SL0028(13-15), 08/07/97, 16:25, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Moisture	26.9	0.05	%	1	
	Total Cyanide	BDL	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.8	mg/kg	1	EPA 6010A
7440382	Total Arsenic	1.8	1.4	mg/kg	1	EPA 7060A
7440393	Total Barium	120	1.4	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.7	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.7	mg/kg	1	EPA 6010A
7440473	Total Chromium	10	1.4	mg/kg	1	EPA 6010A
7440508	Total Copper	BDL	2.7	mg/kg	1	EPA 6010A
7439921	Total Lead	36	3.4	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.34	mg/kg	1	EPA 7471
7440020	Total Nickel	23	2.7	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	5.5	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.4	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	5.5	mg/kg	1	EPA 7841
7440666	Total Zinc	62	2.7	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	68	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	68	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	68	ug/kg	1	EPA 8260A
71432	Benzene	BDL	7	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	7	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	7	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	14	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	7	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	7	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	7	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	7	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	7	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	14	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	14	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0570

Page 1 of 4

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970807-LD-38-SL0028(13-15), 08/07/97, 16:25, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	7	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	14	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	68	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	68	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	7	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	68	ug/kg	1	EPA 8260A
7425	Styrene	BDL	7	ug/kg	1	EPA 8260A
345	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg	1	EPA 8260A
108883	Toluene	BDL	7	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	14	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	14	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	450	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	450	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	450	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	450	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	450	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	450	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	450	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	450	ug/kg	1	EPA 8270B
7755	2-Nitrophenol	BDL	450	ug/kg	1	EPA 8270B
1027	4-Nitrophenol	BDL	2300	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	450	ug/kg	1	EPA 8270B
108952	Phenol	BDL	450	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0571

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970807-LD-38-SL0028(13-15), 08/07/97, 16:25, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	450	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	450	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2300	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	450	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	450	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	450	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	450	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	450	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	450	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	450	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	450	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	450	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	450	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	450	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	450	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	450	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	450	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	450	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	450	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	450	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	450	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	450	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	450	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	450	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	450	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	450	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	450	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2300	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	450	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	450	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	450	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	450	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	450	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	450	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	450	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	450	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	450	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	450	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	450	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	450	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	450	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	450	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	450	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	450	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	450	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0572

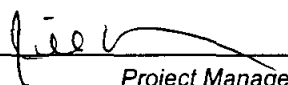
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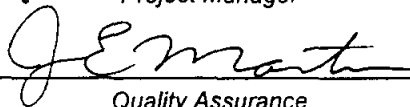
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970807-LD-38-SL0028(13-15), 08/07/97, 16:25, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	450	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	450	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	450	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	450	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	450	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	450	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	450	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	450	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance





# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85785-15

September 13, 1997

### Sample Description

Sloss Industries

Water, G & M Project #TF0320.015, 970808-LD-38-TB0002, 08/08/97, 6:55, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 826C
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 826C
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0574

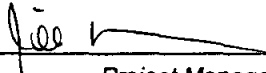
**Sample Description**

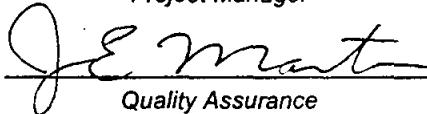
Sloss Industries

Water, G &amp; M Project #TF0320.015, 970808-LD-38-TB0002, 08/08/97, 6:55, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85785-16

September 13, 1997

### Sample Description

Sloss Industries

Water, G & M Project #TF0320.015, 970808-LD-38-FB0002, 08/08/97, 6:30, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
<b>Priority Pollutant Metals</b>						
<b>Metals</b>						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	BDL	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
<b>Volatile Organics (EPA 8260A)</b>						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0576

## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970808-LD-38-FB0002, 08/08/97, 6:30, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
345	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
7184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
7027	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
365	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

0577

## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970808-LD-38-FB0002, 08/08/97, 6:30, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 827
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

0578

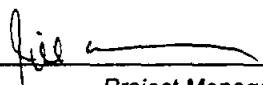
**Sample Description**

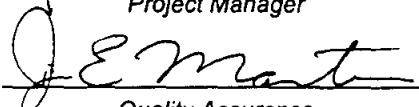
Sloss Industries

Water, G &amp; M Project #TF0320.015, 970808-LD-38-FB0002, 08/08/97, 6:30, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 85785-17

September 13, 1997

### Sample Description

Sloss Industries

Water, G & M Project #TF0320.015, 970808-LD-38-EB0002, 08/08/97, 6:40, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
<b>Priority Pollutant Metals</b>						
<b>Metals</b>						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	BDL	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
<b>Volatile Organics (EPA 8260A)</b>						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0580

**Sample Description**

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970808-LD-38-EB0002, 08/08/97, 6:40, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
345	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
10027	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

0581



## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970808-LD-38-EB0002, 08/08/97, 6:40, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

0582

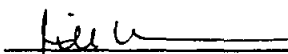
**Sample Description**

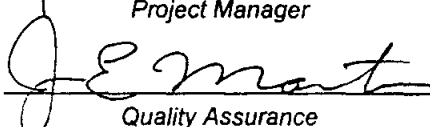
Sloss Industries

Water, G &amp; M Project #TF0320.015, 970808-LD-38-EB0002, 08/08/97, 6:40, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85785-18

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970808-LD-38-SL0027(22-24), 08/08/97, 8:05, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	28.6	0.07	%	1	
	Volatile Organics (EPA 8260A)					
67641	Acetone	BDL	70	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	70	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	70	ug/kg	1	EPA 8260A
71432	Benzene	BDL	7	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	7	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	7	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	14	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	7	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	7	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	7	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	7	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	7	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	14	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	14	ug/kg	1	EPA 8260A
124481	Dibromochloromethane	BDL	7	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	14	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	70	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	70	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0584

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970808-LD-38-SL0027(22-24), 08/08/97, 8:05, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
75092	Methylene chloride	BDL	7	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	70	ug/kg	1	EPA 8260A
100425	Styrene	BDL	7	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg	1	EPA 8260A
108883	Toluene	BDL	7	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	14	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	14	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg	1	EPA 8260A

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85785-19

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970808-LD-39-SL0034(10-12), 08/08/97, 8:40, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	16.7	0.06	%	1	
	Volatile Organics (EPA 8260A)					
67641	Acetone	BDL	60	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	60	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	60	ug/kg	1	EPA 8260A
71432	Benzene	BDL	6	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	12	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	12	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	12	ug/kg	1	EPA 8260A
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	12	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	60	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	60	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0586

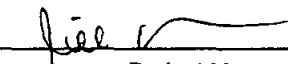
**Sample Description**

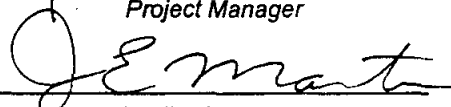
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970808-LD-39-SL0034(10-12), 08/08/97, 8:40, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	60	ug/kg	1	EPA 8260A
100425	Styrene	BDL	6	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	12	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	12	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85785-20

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970808-LD-38-SL0037(8-10), 08/08/97, 10:40, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	25.7	0.05	%	1	
57125	Total Cyanide	BDL	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.7	mg/kg	1	EPA 6010A
7440382	Total Arsenic	3.5	1.3	mg/kg	1	EPA 7060A
7440393	Total Barium	94	1.3	mg/kg	1	EPA 6010
7440417	Total Beryllium	BDL	0.7	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.7	mg/kg	1	EPA 6010A
7440473	Total Chromium	5.7	1.3	mg/kg	1	EPA 6010A
7440508	Total Copper	BDL	2.7	mg/kg	1	EPA 6010A
7439921	Total Lead	11	3.4	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.34	mg/kg	1	EPA 7471
7440020	Total Nickel	3.0	2.7	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	5.4	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.3	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	5.4	mg/kg	1	EPA 7841
7440666	Total Zinc	63	2.7	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	67	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	67	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	67	ug/kg	1	EPA 8260A
71432	Benzene	BDL	7	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	7	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	7	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	13	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	7	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	7	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	7	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	7	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	7	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	13	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	13	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0588

Page 1 of 4

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970808-LD-38-SL0037(8-10), 08/08/97, 10:40, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	7	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	13	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	67	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	67	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	7	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	67	ug/kg	1	EPA 8260A
1425	Styrene	BDL	7	ug/kg	1	EPA 8260A
14345	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg	1	EPA 8260A
108883	Toluene	BDL	7	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	14	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	14	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	450	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	450	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	450	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	450	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	450	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	450	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	450	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	450	ug/kg	1	EPA 8270B
1755	2-Nitrophenol	BDL	450	ug/kg	1	EPA 8270B
1027	4-Nitrophenol	BDL	2300	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	450	ug/kg	1	EPA 8270B
108952	Phenol	BDL	450	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0589



## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970808-LD-38-SL0037(8-10), 08/08/97, 10:40, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	450	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	450	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2300	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	450	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	450	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	450	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	450	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	450	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	450	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	450	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	450	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	450	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	450	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	450	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	450	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	450	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	450	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	450	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	450	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	450	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	450	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	450	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	450	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	450	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	450	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	450	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	450	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2300	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	450	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	450	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	450	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	450	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	450	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	450	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	450	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	450	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	450	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	450	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	450	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	450	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	450	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	450	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	450	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	450	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	450	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0590

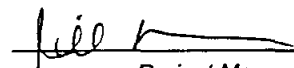
**Sample Description**

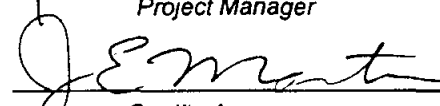
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970808-LD-38-SL0037(8-10), 08/08/97, 10:40, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	450	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	450	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	450	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	450	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	450	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	450	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	450	ug/kg	.1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	450	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 85785-21

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970808-LD-38-SL0037(4-6), 08/08/97, 11:00, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	25.2	0.05	%	1	
57125	Total Cyanide	BDL	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.7	mg/kg	1	EPA 6010A
7440382	Total Arsenic	2.0	1.3	mg/kg	1	EPA 7060A
7440393	Total Barium	2.4	1.3	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.7	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.7	mg/kg	1	EPA 6010A
7440473	Total Chromium	19	1.3	mg/kg	1	EPA 6010A
7440508	Total Copper	BDL	2.7	mg/kg	1	EPA 6010A
7439921	Total Lead	9.4	3.3	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.33	mg/kg	1	EPA 7471
7440020	Total Nickel	BDL	2.7	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	5.3	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.3	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	5.3	mg/kg	1	EPA 7841
7440666	Total Zinc	10	2.7	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	67	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	67	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	67	ug/kg	1	EPA 8260A
71432	Benzene	BDL	7	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	7	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	7	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	13	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	7	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	7	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	7	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	7	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	7	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	13	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	13	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0592

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970808-LD-38-SL0037(4-6), 08/08/97, 11:00, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	7	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	13	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	67	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	67	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	7	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	67	ug/kg	1	EPA 8260A
70425	Styrene	BDL	7	ug/kg	1	EPA 8260A
73345	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg	1	EPA 8260A
108883	Toluene	BDL	7	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	13	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	13	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg	1	EPA 8260A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	440	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	440	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	440	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	440	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	440	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	440	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	440	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	440	ug/kg	1	EPA 8270B
7755	2-Nitrophenol	BDL	440	ug/kg	1	EPA 8270B
70027	4-Nitrophenol	BDL	2300	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	440	ug/kg	1	EPA 8270B
108952	Phenol	BDL	440	ug/kg	1	EPA 8270B

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970808-LD-38-SL0037(4-6), 08/08/97, 11:00, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	440	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	440	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2300	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	440	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	440	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	440	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	440	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	440	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	440	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	440	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	440	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	440	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	440	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	440	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	440	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	440	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	440	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	440	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	440	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	440	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	440	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	440	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	440	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	440	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	440	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	440	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	440	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2300	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	440	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	440	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	440	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	440	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	440	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	440	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	440	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	440	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	440	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	440	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	440	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	440	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	440	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	440	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	440	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	440	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	440	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

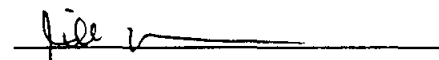
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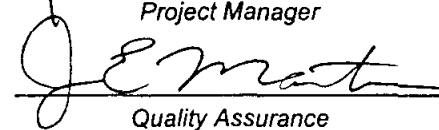
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970808-LD-38-SL0037(4-6), 08/08/97, 11:00, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	440	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	440	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	440	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	440	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	440	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	440	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	440	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	440	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85785-22

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970808-LD-39-SL0035(10-12), 08/08/97, 12:40, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	33.2	0.05	%	1	
57125	Total Cyanide	BDL	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	7.5	mg/kg	1	EPA 6010A
7440382	Total Arsenic	2.7	1.5	mg/kg	1	EPA 7060A
7440393	Total Barium	130	1.5	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.7	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.7	mg/kg	1	EPA 6010A
7440473	Total Chromium	11	1.5	mg/kg	1	EPA 6010A
7440508	Total Copper	BDL	3.0	mg/kg	1	EPA 6010A
7439921	Total Lead	7.9	3.7	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.37	mg/kg	1	EPA 7471
7440020	Total Nickel	9.3	3.0	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	6.0	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.5	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	6.0	mg/kg	1	EPA 7841
7440666	Total Zinc	57	3.0	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	65	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	65	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	65	ug/kg	1	EPA 8260A
71432	Benzene	BDL	7	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	7	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	7	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	13	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	7	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	7	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	7	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	7	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	7	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	13	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	13	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0596

Page 1 of 4

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970808-LD-39-SL0035(10-12), 08/08/97, 12:40, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	7	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	13	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	65	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	65	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	7	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	65	ug/kg	1	EPA 8260A
100425	Styrene	BDL	7	ug/kg	1	EPA 8260A
100345	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg	1	EPA 8260A
108883	Toluene	BDL	7	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	13	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	13	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	490	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	490	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	490	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	490	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	490	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2500	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2500	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	490	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	490	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	490	ug/kg	1	EPA 8270B
100755	2-Nitrophenol	BDL	490	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2500	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	490	ug/kg	1	EPA 8270B
108952	Phenol	BDL	490	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0597



## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970808-LD-39-SL0035(10-12), 08/08/97, 12:40, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	490	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	490	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2500	ug/kg	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	490	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	490	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	490	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	490	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	490	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	490	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	490	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	490	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	490	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	490	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	490	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	490	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	490	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	490	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	490	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	490	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	490	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	490	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	490	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	490	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	490	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	490	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	490	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	490	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2500	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	490	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	490	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	490	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	490	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	490	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	490	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	490	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	490	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	490	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	490	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	490	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	490	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	490	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	490	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	490	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	490	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	490	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0500

Page 2 of 4

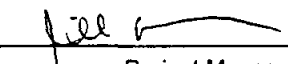
## Sample Description

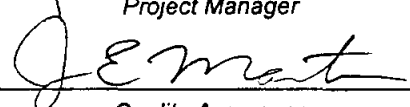
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970808-LD-39-SL0035(10-12), 08/08/97, 12:40, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	490	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	490	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	490	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	490	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	490	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	490	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	490	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	490	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85785-23

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970808-LD-39-SL0033(11-13), 08/08/97, 15:25, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	18.7	0.05	%	1	
57125	Total Cyanide	1.25	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.2	mg/kg	1	EPA 6010A
7440382	Total Arsenic	5.0	1.2	mg/kg	1	EPA 7060A
7440393	Total Barium	420	1.2	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.6	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.6	mg/kg	1	EPA 6010A
7440473	Total Chromium	10	1.2	mg/kg	1	EPA 6010A
7440508	Total Copper	4.3	2.5	mg/kg	1	EPA 6010A
7439921	Total Lead	9.3	3.1	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.31	mg/kg	1	EPA 7471
7440020	Total Nickel	22	2.5	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.9	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.2	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.9	mg/kg	1	EPA 7841
7440666	Total Zinc	53	2.5	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	62	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	62	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	62	ug/kg	1	EPA 8260A
71432	Benzene	BDL	6	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	12	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	12	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	12	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0600

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970808-LD-39-SL0033(11-13), 08/08/97, 15:25, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	12	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	62	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	62	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	62	ug/kg	1	EPA 8260A
7425	Styrene	BDL	6	ug/kg	1	EPA 8260A
5345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	12	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	12	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	410	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	410	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	410	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	410	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	410	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2100	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2100	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	410	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	410	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	410	ug/kg	1	EPA 8270B
73755	2-Nitrophenol	BDL	410	ug/kg	1	EPA 8270B
7027	4-Nitrophenol	BDL	2100	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	410	ug/kg	1	EPA 8270B
108952	Phenol	BDL	410	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0601

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970808-LD-39-SL0033(11-13), 08/08/97, 15:25, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	410	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	410	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2100	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	410	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	410	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	410	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	410	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	410	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	410	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	410	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	410	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	410	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	410	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	410	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	410	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	410	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	410	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	410	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	410	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	410	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	410	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	410	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	410	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	410	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	410	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	410	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	410	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2100	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	410	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	410	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	410	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	410	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	410	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	410	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	410	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	410	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	410	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	410	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	410	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	410	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	410	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	410	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	410	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	410	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	410	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0602

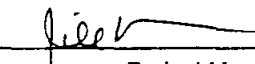
**Sample Description**

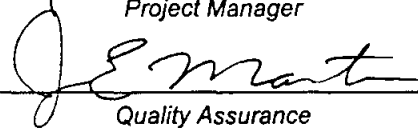
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970808-LD-39-SL0033(11-13), 08/08/97, 15:25, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	410	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	410	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	410	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	410	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	410	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	410	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	410	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	410	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 85785-24

September 13, 1997

### Sample Description

Sloss Industries

Water, G & M Project #TF0320.015, 970807-LD-39-EB0001, 08/08/97, 19:30, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
100027	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

0604

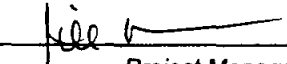
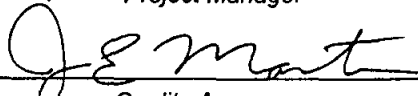
## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970807-LD-39-EB0001, 08/08/97, 19:30, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
583	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
 Project Manager  
  
 Quality Assurance





# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 85785-25

September 13, 1997

### Sample Description

Sloss Industries  
Aqueous Blank,, Batch #31953,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 827
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
100027	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 827
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 827
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit


0606

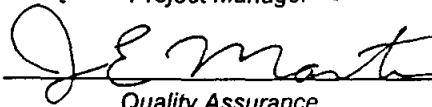
Page 1 of 2

**Sample Description**  
 Sloss Industries  
 Aqueous Blank,, Batch #31953,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
583	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
1474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
 Project Manager

  
 Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 85785-26

September 13, 1997

### Sample Description

Sloss Industries  
Soil/Sediment Blank,, Batch #31970,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	330	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	330	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	330	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	330	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	330	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	1700	ug/kg	1	EPA 827
51285	2,4-Dinitrophenol	BDL	1700	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	330	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	1700	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	330	ug/kg	1	EPA 8270B
108952	Phenol	BDL	330	ug/kg	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	330	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	330	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	1700	ug/kg	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	330	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	330	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	330	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	330	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	330	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	330	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	330	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	330	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	330	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	330	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	330	ug/kg	1	EPA 827
39638329	Bis(2-chloroisopropyl)ether	BDL	330	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	330	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	330	ug/kg	1	EPA 8270B

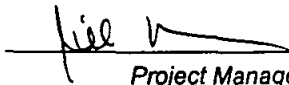
BDL - Below Detection Limit

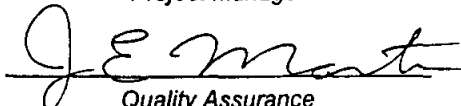
0608

**Sample Description**  
 Sloss Industries  
 Soil/Sediment Blank,, Batch #31970,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106478	p-Chloroaniline	BDL	330	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	330	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	330	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	330	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	330	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	330	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	330	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	1700	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	330	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	330	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	330	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	330	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	330	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	330	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	330	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	330	ug/kg	1	EPA 8270B
783	Hexachlorobutadiene	BDL	330	ug/kg	1	EPA 8270B
474	Hexachlorocyclopentadiene	BDL	330	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	330	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	330	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	330	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	330	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	330	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B
100016	4-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	330	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	330	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	330	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	330	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	330	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	330	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	330	ug/kg	1	EPA 8270B

Respectfully submitted,

  
 Project Manager

  
 Quality Assurance

**Laboratory Report**

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: **85785-27**

September 13, 1997

**Sample Description**

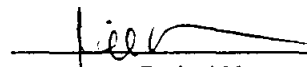
Sloss Industries  
Soil/Sediment Blank,, Batch #31980,,

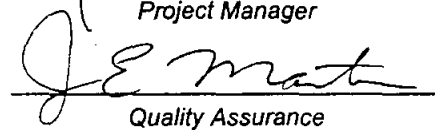
CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	50	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/kg	1	EPA 8260A
71432	Benzene	BDL	5	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	5	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	5	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/kg	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/kg	1	EPA 8260A

**Sample Description**  
Sloss Industries  
Soil/Sediment Blank,, Batch #31980,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/kg	1	EPA 8260A
100425	Styrene	BDL	5	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/kg	1	EPA 8260A
108883	Toluene	BDL	5	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	5	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	5	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/kg	1	EPA 8260A

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85785-28

September 13, 1997

### Sample Description

Sloss Industries

Aqueous Blank,, Batch #31991,...

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 826C
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 826C
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

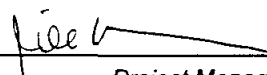
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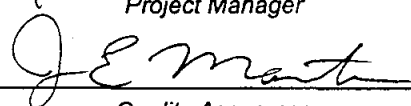
Page 1 of 2

**Sample Description**  
Sloss Industries  
Aqueous Blank,, Batch #31991,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A

Respectfully submitted,

  
Project Manager

  
Quality Assurance





# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 85785-29

September 13, 1997

### Sample Description

Sloss Industries  
Soil/Sediment,, Batch #31992,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	50	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/kg	1	EPA 8260A
71432	Benzene	BDL	5	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	5	ug/kg	1	EPA 826C
74839	Bromomethane	BDL	10	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	5	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/kg	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/kg	1	EPA 826C
74884	Iodomethane	BDL	5	ug/kg	1	EPA 826C
78933	2-Butanone	BDL	50	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/kg	1	EPA 8260A


BDL - Below Detection Limit

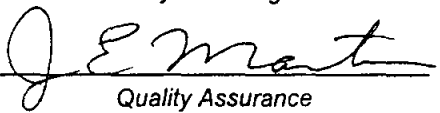
0614

**Sample Description**  
Sloss Industries  
Soil/Sediment,, Batch #31992,...

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/kg	1	EPA 8260A
100425	Styrene	BDL	5	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/kg	1	EPA 8260A
108883	Toluene	BDL	5	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	5	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	5	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/kg	1	EPA 8260A

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 85785-30

September 13, 1997

### Sample Description

Sloss Industries  
Soil/Sediment,, Batch #32102,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	50	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/kg	1	EPA 8260A
71432	Benzene	BDL	5	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	5	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	5	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/kg	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

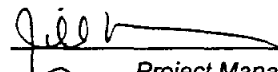
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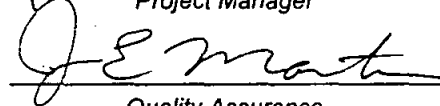
Page 1 of 2

**Sample Description**  
Sloss Industries  
Soil/Sediment,, Batch #32102,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/kg	1	EPA 8260A
100425	Styrene	BDL	5	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/kg	1	EPA 8260A
108883	Toluene	BDL	5	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	5	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	5	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/kg	1	EPA 8260A

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 85785-31

September 13, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970807-LD-38-SL0028(8-10)MSD, 08/07/97, 14:20, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	0.2	0.1	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	120	5.0	mg/kg	1	EPA 6010A
7440382	Total Arsenic	132	1.0	mg/kg	1	EPA 7060A
7440393	Total Barium	980	1.0	mg/kg	1	EPA 6010A
7440417	Total Beryllium	120	0.5	mg/kg	1	EPA 601
7440439	Total Cadmium	38	0.5	mg/kg	1	EPA 6010A
7440473	Total Chromium	110	1.0	mg/kg	1	EPA 6010A
7440508	Total Copper	110	2.0	mg/kg	1	EPA 6010A
7439921	Total Lead	460	2.5	mg/kg	1	EPA 6010A
7439976	Total Mercury	1.94	0.25	mg/kg	1	EPA 7471
7440020	Total Nickel	260	2.0	mg/kg	1	EPA 6010A
7782492	Total Selenium	80	4.0	mg/kg	1	EPA 7740
7440224	Total Silver	29	1.0	mg/kg	1	EPA 6010A
7440280	Total Thallium	96	4.0	mg/kg	1	EPA 7841
7440666	Total Zinc	280	2.0	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	50	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/kg	1	EPA 8260A
71432	Benzene	50	5	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	5	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/kg	1	EPA 8260A
108907	Chlorobenzene	50	5	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	5	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/kg	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

0618

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970807-LD-38-SL0028(8-10)MSD, 08/07/97, 14:20, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	42	5	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/kg	1	EPA 8260A
100425	Styrene	BDL	5	ug/kg	1	EPA 8260A
45	1,1,2,2-Tetrachloroethane	BDL	5	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/kg	1	EPA 8260A
108883	Toluene	50	5	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79016	Trichloroethene	44	5	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	5	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	1700	450	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	1500	450	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	450	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	450	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	450	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2300	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	450	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	450	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	450	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	450	ug/kg	1	EPA 8270B
027	4-Nitrophenol	2000	2300	ug/kg	1	EPA 8270B
00865	Pentachlorophenol	2500	450	ug/kg	1	EPA 8270B
108952	Phenol	1400	450	ug/kg	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	450	ug/kg	1	EPA 8270B

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970807-LD-38-SL0028(8-10)MSD, 08/07/97, 14:20, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	450	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2300	ug/kg	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	940	450	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	450	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	450	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	450	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	450	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	450	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	450	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	450	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	450	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	450	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	450	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	450	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	450	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	450	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	450	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	450	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	450	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	450	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	450	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	450	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	450	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	450	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	610	450	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	450	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2300	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	450	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	450	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	1200	450	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	450	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	450	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	450	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	450	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	450	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	450	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	450	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	450	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	450	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	450	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	450	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	450	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	450	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	450	ug/kg	1	EPA 8270B
100016	4-Nitroaniline	BDL	450	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

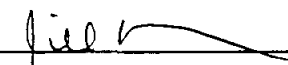
## Sample Description

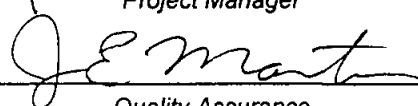
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970807-LD-38-SL0028(8-10)MSD, 08/07/97, 14:20, received 08/08/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	450	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	450	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	850	450	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	450	ug/kg	1	EPA 8270B
129000	Pyrene	1200	450	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	450	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	750	450	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



Analytical Services Inc. Batch QC  
 For Report Number :85785  
 Base Neutrals / Acids

Matrix : Aqueous

Batch # 31953

Method : EPA 8270

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
Phenol	45	45	0	12 - 89	0 - 42
2-Chlorophenol	86	87	2	27 - 123	0 - 40
1,4-Dichlorobenzene	62	67	8	36 - 97	0 - 28
N-Nitrosodipropylamine	82	84	1	41 - 116	0 - 38
1,2,4-Trichlorobenzene	73	76	4	44 - 142	0 - 28
4-Chloro-3-methylphenol	79	84	6	23 - 97	0 - 42
Acenaphthene	114	104	9	46 - 118	0 - 31
2,4-Dinitrotoluene	85	95	12	24 - 96	0 - 38
4-Nitrophenol	35	31	10	10 - 80	0 - 50
Pentachlorophenol	66	44	40	9 - 103	0 - 50
Pyrene	96	114	17	26 - 127	0 - 31

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
Phenol	51	50	1	12 - 89	0 - 42
2-Chlorophenol	83	83	0	27 - 123	0 - 40
1,4-Dichlorobenzene	67	67	1	36 - 97	0 - 28
N-Nitrosodipropylamine	79	80	2	41 - 116	0 - 38
1,2,4-Trichlorobenzene	77	74	3	44 - 142	0 - 28
4-Chloro-3-methylphenol	80	82	3	23 - 97	0 - 42
Acenaphthene	81	81	0	46 - 118	0 - 31
2,4-Dinitrotoluene	81	90	10	24 - 96	0 - 38
4-Nitrophenol	45	57	22	10 - 80	0 - 50
Pentachlorophenol	70	94	29	9 - 103	0 - 50
Pyrene	77	84	9	26 - 127	0 - 31

## Analytical Services Inc. Batch QC

Surrogate Recovery  
Base Neutrals / Acids

Matrix : Aqueous

Batch # 31953

Method : EPA 8270

## % Recovery Objectives

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S1	2-Fluorophenol	21 - 100
S2	Phenol-d5	10 - 94
S3	Nitrobenzene-d5	35 - 114
S4	2-Fluorobiphenyl	43 - 116
S5	2,4,6-Tribromophenol	10 - 123
S6	Terphenyl-d14	33 - 141.

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Sample	File	S1	S2	S3	S4	S5	S6
<hr/>							
31953BLK	A6302	39	29	74	112	55	93
31953LCS	A6303	48	32	81	105	69	86
31953LCSD	A6304	47	31	83	96	60	103
85772	A6305	26	20	67	109	59	86
85785-16	B9923	53	33	84	91	96	74
85785-17	B9926	50	32	77	88	112	90
85785-24	B9927	43	29	74	82	89	79
85785-16MS	B9924	67	49	83	90	105	78
85785-16MSD	B9925	67	45	82	81	101	76
85797-11	B9928			46	46		34
^^Note: BN ONLY							
85797-12	B9929			77	88		66
^^Note: BNN ONLY							
85780	B9930			58	77		61
^^Note: BN ONLY							
85863	B9953	46	31	73	74	96	66
85863DUP	B9954	52	33	84	84	94	61
85880-1	A6401			63	93		54
^^Note: BN ONLY							
85880-2	A6402			54	58		52
85904-1	A6403	31	27	66	97	65	80
85954-3	A6434			16	91		59
^^Note: BN ONLY							
85954-5	A6435			65	92		74
^^Note: BN ONLY							
85954-7	A6436			9	74		83
^^Note: BN ONLY							
85954-3D	A6452			1	142		86
^^Note: 1:10 MATRIX EFFECT							

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## Analytical Services Inc. Batch QC

Surrogate Recovery

Base Neutrals / Acids

Matrix : Aqueous

Batch # 31953

Method : EPA 8270

## % Recovery Objectives

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S1	2-Fluorophenol	21 - 100
S2	Phenol-d5	10 - 94
S3	Nitrobenzene-d5	35 - 114
S4	2-Fluorobiphenyl	43 - 116
S5	2,4,6-Tribromophenol	10 - 123
S6	Terphenyl-d14	33 - 141.

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Sample	File	S1	S2	S3	S4	S5	S6
86149-2	B0082			51	71		94
^^Note: PAH ONLY							
86149-4	B0083			58	76		92
^^Note: PAH ONLY							

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Sample Batch Information  
Base Neutrals / Acids      Method : EPA 8270

Sample ID	Preparation			Preparation Notes	Analysis			Inst #
	Date	Time	By		Date	Time	By	
85772	08/11/97	0900	JH/TB		08/11/97	1813	TAS	5970
31953BLK	08/11/97	0900	JH/TB		08/11/97	1634	TAS	5970
31953LCS	08/11/97	0900	JH/TB		08/11/97	1707	TAS	5970
31953LCSD	08/11/97	0900	JH/TB		08/11/97	1740	TAS	5970
85797-11	08/12/97	1300	TB	PAH ONLY	08/13/97	1321	DMB	5971
85797-12	08/12/97	1300	TB	PAH ONLY	08/13/97	1357	DMB	5971
85785-16	08/12/97	0900	TB/JH		08/13/97	1021	DMB	5971
85785-17	08/12/97	0900	TB/JH		08/13/97	1209	DMB	5971
85785-24	08/12/97	0900	TB/JH		08/13/97	1245	DMB	5971
85780	08/12/97	0900	TB/JH	PAH ONLY	08/13/97	1432	DMB	5971
85785-16MS	08/12/97	0900	TB/JH		08/13/97	1057	DMB	5971
85785-16MSD	08/12/97	0900	TB/JH		08/13/97	1133	DMB	5971
85863	08/13/97	0900	TB/JH		08/14/97	1649	RFA	5971
85863DUP	08/14/97	0900	TB/JH		08/14/97	1724	RFA	5971
85880-1	08/15/97	0900	JH	PAH ONLY	08/15/97	1751	TAS	5970
85880-2	08/15/97	0900	JH	PAH ONLY	08/15/97	1824	TAS	5970
85904-1	08/15/97	0900	JH		08/15/97	1857	TAS	5970
85954-3	08/18/97	1200	TB		08/19/97	0004	TAS	5970
85954-5	08/18/97	1200	TB		08/19/97	0036	TAS	5970
85954-7	08/18/97	1200	TB		08/19/97	0108	TAS	5970
85954-3D	08/19/97	1200	TAS		08/19/97	1633	TAS	5970
86149-2	08/21/97	1430	TB/LI		08/22/97	1106	RFA	5971
86149-4	08/21/97	1430	TB/LI		08/22/97	1143	RFA	5971

Analytical Services Inc. Batch QC  
 For Report Number :85785  
 Base Neutrals / Acids

Matrix : Soil/Sediment

Batch # 31970

Method : EPA 8270

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
Phenol	37	43	13	26 - 90	0 - 35
2-Chlorophenol	33	40	20	25 - 102	0 - 50
1,4-Dichlorobenzene	29	35	19	28 - 104	0 - 27
N-Nitrosodipropylamine	43	41	5	41 - 126	0 - 38
1,2,4-Trichlorobenzene	40	41	4	38 - 107	0 - 23
4-Chloro-3-methylphenol	44	46	3	26 - 103	0 - 33
Acenaphthene	62	71	14	31 - 137	0 - 19
2,4-Dinitrotoluene	64	67	5	28 - 89	0 - 47
4-Nitrophenol	56	62	9	11 - 114	0 - 50
Pentachlorophenol	56	64	14	17 - 109	0 - 47
Pyrene	110	116	6	35 - 142	0 - 36

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
Phenol	49	44	12	26 - 90	0 - 35
2-Chlorophenol	54	47	14	25 - 102	0 - 50
1,4-Dichlorobenzene	48	38	23	28 - 104	0 - 27
N-Nitrosodipropylamine	58	52	11	41 - 126	0 - 38
1,2,4-Trichlorobenzene	55	46	19	38 - 107	0 - 23
4-Chloro-3-methylphenol	53	52	1	26 - 103	0 - 33
Acenaphthene	60	58	3	31 - 137	0 - 19
2,4-Dinitrotoluene	77	73	5	28 - 89	0 - 47
4-Nitrophenol	70	62	13	11 - 114	0 - 50
Pentachlorophenol	82	76	8	17 - 109	0 - 47
Pyrene	79	76	3	35 - 142	0 - 36

## Analytical Services Inc. Batch QC

## Surrogate Recovery

## Base Neutrals / Acids

Matrix : Soil/Sediment Batch # 31970

Method : EPA 8270

## % Recovery Objectives

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S1	2-Fluorophenol	25 - 121
S2	Phenol-d5	24 - 113
S3	Nitrobenzene-d5	23 - 120
S4	2-Fluorobiphenyl	30 - 115
S5	2,4,6-Tribromophenol	19 - 122
S6	Terphenyl-d14	18 - 137.

---

Sample	File	S1	S2	S3	S4	S5	S6
31970BLK	A6329	54	59	57	87	56	95
31970LCS	A6330	29	34	32	54	56	98
31970LCSD	A6331	32	39	37	62	61	106
85785-8	B9903	34	36	42	45	51	62
85785-9	B9904	36	36	45	45	47	64
85785-10	B9905	32	31	40	42	51	69
85785-11	B9906	29	29	39	44	40	64
85785-12	B9907	54	50	63	71	63	73
85785-13	B9908	35	35	46	50	52	64
85785-13MS	B9909	46	46	62	67	80	77
85785-13MSD	B9910	41	40	55	61	79	75
85785-14	B9911	40	40	52	58	64	71
85785-20	B9912	35	33	46	46	52	71
85785-21	B9913	16	15	20	18	36	54
85785-22	B9914	46	45	60	64	70	76
85785-23	B9915	28	25	32	34	44	41
85784-2	B9916	18	17	22	25	28	38
85785-2	A6335	30	32	28	59	52	90
85785-3	A6336	47	53	55	82	64	107
85785-4	A6337	39	46	43	72	50	114
85785-7	A6338	26	43	41	64	13	93
85785-6	A6339	50	56	57	79	53	116
85785-5	A6340	33	43	40	68	23	88
85785-7DUP	A6341	27	38	35	57	16	84
85785-21RR	A6363	41	49	49	71	66	75

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Sample Batch Information  
Base Neutrals / Acids      Method : EPA 8270

Sample ID	Preparation			Preparation Notes	Analysis			Inst #
	Date	Time	By		Date	Time	By	
85785-10	08/12/97	0800	LI/AF		08/12/97	2114	DMB	5971
85785-11	08/12/97	0800	LI/AF		08/12/97	2149	DMB	5971
85785-12	08/12/97	0800	LI/AF		08/12/97	2224	DMB	5971
85785-13	08/12/97	0800	LI/AF		08/12/97	2300	DMB	5971
85785-14	08/12/97	0800	LI/AF		08/13/97	0046	DMB	5971
85785-2	08/12/97	0800	LI/AF		08/12/97	1852	TAS	5970
85785-20	08/12/97	0800	LI/AF		08/13/97	0122	DMB	5971
85785-21	08/12/97	0800	LI/AF		08/13/97	0157	DMB	5971
85785-22	08/12/97	0800	LI/AF		08/13/97	0233	DMB	5971
85785-23	08/12/97	0800	LI/AF		08/13/97	0308	DMB	5971
85785-3	08/12/97	0800	LI/AF		08/12/97	1925	TAS	5970
85785-4	08/12/97	0800	LI/AF		08/12/97	1958	TAS	5970
85785-5	08/12/97	0800	LI/AF		08/12/97	2137	TAS	5970
85785-6	08/12/97	0800	LI/AF		08/12/97	2104	TAS	5970
85785-7	08/12/97	0800	LI/AF		08/12/97	2031	TAS	5970
85785-8	08/12/97	0800	LI/AF		08/12/97	2003	DMB	5971
85785-9	08/12/97	0800	LI/AF		08/12/97	2038	DMB	5971
85784-2	08/12/97	0800	LI/AF		08/13/97	0344	DMB	5971
85785-7DUP	08/12/97	0800	LI/AF		08/12/97	2209	TAS	597
85785-13MS	08/12/97	0800	LI/AF		08/12/97	2335	DMB	597
85785-13MSD	08/12/97	0800	LI/AF		08/13/97	0011	DMB	5971
31970BLK	08/12/97	0800	LI/AF		08/12/97	1534	TAS	5970
31970LCS	08/12/97	0800	LI/AF		08/12/97	1607	TAS	5970
31970LCSD	08/12/97	0800	LI/AF		08/12/97	1641	TAS	5970
85785-21RR	08/13/97	0800	ASF		08/13/97	1747	TAS	5970

Analytical Services Inc. Batch QC  
 For Report Number :85785  
 Volatile Organics

Matrix : Soil/Sediment

Batch # 31980

Method : EPA 8260

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	86	89	3	61 - 145	0 - 14
Trichloroethene	94	95	1	71 - 120	0 - 14
Benzene	109	111	2	76 - 127	0 - 11
Toluene	110	109	1	76 - 125	0 - 13
Chlorobenzene	107	109	2	75 - 130	0 - 13

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	88	93	5	61 - 145	0 - 14
Trichloroethene	91	90	2	71 - 120	0 - 14
Benzene	108	110	3	76 - 127	0 - 11
Toluene	109	115	5	76 - 125	0 - 13
Chlorobenzene	103	100	3	75 - 130	0 - 13



Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Soil/Sediment Batch # 31980

Method : EPA 8260

## % Recovery Objectives

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S1	1,2-Dichloroethane-d4	70 - 121
S2	Toluene-d8	81 - 117
S3	Ethylbenzene-d10	79 - 115
S4	4-Bromofluorobenzene	74 - 121

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Sample	File	S1	S2	S3	S4	S5	S6
<hr/>							
31980BLK1A	>LB687	99	98	101	106		
^^Note: 85657-23							
85657-2	>LB707	95	102	99	102		
85657-2MS	>LB708	95	104	103	101		
^^Note: 85657-3							
85657-2MSD	>LB716	103	107	103	98		
^^Note: 85657-25							
85657-4	>LB717	96	111	102	94		
31980BLK1B	>LB721	97	98	97	103		
31980LCS	>LB724	95	103	99	103		
31980LCSD	>LB725	95	103	99	103		
85657-8	>LB729	94	102	103	102		
85657-13	>LB730	91	101	102	100		
85657-16	>LB809	85	97		99		
85657-5	>LB726	90	104	102	100		
85657-6	>LB727	98	107	104	97		
85657-7	>LB728	96	104	101	101		
31980BLK1C	>LB780	103	106	103	106		
85785-2	>LB799	109	112	108	97		
85785-3	>LB800	96	103	107	108		
85785-4	>LB801	97	103	105	108		
31980BLK1D	>LB812	98	101	103	111		
^^Note: 85785-27							
85785-6	>LB816	97	103	105	104		
85785-5	>LB817	94	102	105	107		
85785-7	>LB818	93	102	104	109		
85785-8	>LB819	95	116	113	98		
85785-9	>LB828	91	103	109	96		
85785-10	>LB829	88	100	109	99		
85785-11	>LB830	90	103	112	102		
85785-14	>LB831	89	101	109	99		
85785-9DUP	>LB837	91	102	109	100		

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Sample Batch Information  
Volatile Organics Method : EPA 8260

Sample ID	Preparation		Preparation Notes	Analysis			Inst #
	Date	Time By		Date	Time By		
31980BLK1A	/	/		08/11/97	1130	JKP	VOA1
85657-2	/	/		08/11/97	2325	JKP	VOA1
85657-2MS	/	/		08/12/97	0000	JKP	VOA1
85657-2MSD	/	/		08/12/97	0439	JKP	VOA1
85657-4	/	/		08/12/97	0513	JKP	VOA1
31980BLK1B	/	/		08/12/97	1042	JKP	VOA1
31980LCS	/	/		08/12/97	1227	JKP	VOA1
31980LCSD	/	/		08/12/97	1301	JKP	VOA1
85657-8	/	/		08/13/97	0011	JKP	VOA1
85657-13	/	/		08/13/97	0046	JKP	VOA1
85657-16	/	/		08/15/97	0209	JKP	VOA1
85657-5	/	/		08/12/97	1337	JKP	VOA1
85657-6	/	/		08/12/97	1519	JKP	VOA1
85657-7	/	/		08/12/97	1558	JKP	VOA1
31980BLK1C	/	/		08/14/97	1011	JKP	VOA1
85785-2	/	/		08/14/97	2016	JKP	VOA1
85785-3	/	/		08/14/97	2051	JKP	VOA1
85785-4	/	/		08/14/97	2127	JKP	VOA1
31980BLK1D	/	/		08/15/97	1112	JKP	VOA1
85-6	/	/		08/15/97	1337	JKP	VOA1
85785-5	/	/		08/15/97	1413	JKP	VOA1
85785-7	/	/		08/15/97	1448	JKP	VOA1
85785-8	/	/		08/15/97	1523	JKP	VOA1
85785-9	/	/		08/15/97	2207	JKP	VOA1
85785-10	/	/		08/15/97	2242	JKP	VOA1
85785-11	/	/		08/15/97	2318	JKP	VOA1
85785-14	/	/		08/15/97	2353	JKP	VOA1
85785-9DUP	/	/		08/16/97	0325	JKP	VOA1

Analytical Services Inc. Batch QC  
 For Report Number :85785  
 Volatile Organics

Matrix : Aqueous

Batch # 31991

Method : EPA 8260

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	86	89	3	61 - 145	0 - 14
Trichloroethene	94	95	1	71 - 120	0 - 14
Benzene	109	111	2	76 - 127	0 - 11
Toluene	110	109	1	76 - 125	0 - 13
Chlorobenzene	107	109	2	75 - 130	0 - 13

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	88	87	2	61 - 145	0 - 14
Trichloroethene	97	95	2	71 - 120	0 - 14
Benzene	114	111	2	76 - 127	0 - 11
Toluene	112	112	0	76 - 125	0 - 13
Chlorobenzene	108	109	0	75 - 130	0 - 13

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Aqueous

Batch # 31991

Method : EPA 8260

## % Recovery Objectives

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S1	1,2-Dichloroethane-d4	76 - 114
S2	Toluene-d8	88 - 110
S3	Ethylbenzene-d10	75 - 115
S4	4-Bromofluorobenzene	86 - 115

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Sample	File	S1	S2	S3	S4	S5	S6
<hr/>							
31991BLK1A	>LB721	97	98	97	103		
31991LCS	>LB724	95	103	99	103		
31991LCSD	>LB725	95	103	99	103		
85575RA	>LB739	93	101	101	101		
^^Note: RA AT LESSER DIL							
85772	>LB740	91	102	101	104		
85772MS	>LB741	93	103	98	103		
85772MSD	>LB742	95	103	99	104		
85609-1	>LB744	93	102	98	101		
85609-2	>LB770	98	110	103	103		
31991BLK1B	>LB752	96	99	98	102		
85609-1RA	>LB771	95	107	103	104		
^^Note: RA AT LESSER DIL							
85658-4	>LB761	120	95	94	108		
85738-2	>LB762	96	100	98	101		
31991BLK1C	>LB780	103	106	103	106		
^^Note: 85785-28							
85785-1	>LB786	98	101	102	106		
85785-15	>LB787	100	98	101	106		
85785-16	>LB788	99	103	104	108		
85785-17	>LB789	96	99	101	106		
85658-4DUP	>LB796	98	102	106	110		
85690-2	>LB802	97	100	103	110		
85541-1	>LB804	100	101	106	107		
85541-2	>LB805	99	102	106	108		
85541-3	>LB806	92	105	105	108		
85656-1	>LB760	101	100	99	103		

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Sample Batch Information  
Volatile Organics      Method : EPA 8260

Sample ID	Preparation			Preparation Notes	Analysis			Inst #
	Date	Time	By		Date	Time	By	
31991BLK1A	/	/			08/12/97	1042	JKP	VOA1
31991LCS	/	/			08/12/97	1227	JKP	VOA1
31991LCSD	/	/			08/12/97	1301	JKP	VOA1
85575RA	/	/			08/12/97	2004	JKP	VOA1
85772	/	/			08/12/97	2040	JKP	VOA1
85772MS	/	/			08/12/97	2115	JKP	VOA1
85772MSD	/	/			08/12/97	2150	JKP	VOA1
85609-1	/	/			08/12/97	2300	JKP	VOA1
85609-2	/	/			08/13/97	1815	JKP	VOA1
31991BLK1B	/	/			08/13/97	1157	JKP	VOA1
85609-1RA	/	/			08/13/97	1850	JKP	VOA1
85658-4	/	/			08/13/97	2257	JKP	VOA1
85738-2	/	/			08/13/97	2333	JKP	VOA1
31991BLK1C	/	/			08/14/97	1011	JKP	VOA1
85746-1	/	/			08/14/97	1157	JKP	VOA1
85746-3	/	/			08/14/97	1233	JKP	VOA1
85746-4	/	/			08/14/97	1309	JKP	VOA1
85785-1	/	/			08/14/97	1344	JKP	VOA1
85785-15	/	/			08/14/97	1419	JKP	VOA1
85785-16	/	/			08/14/97	1455	JKP	VOA1
85785-17	/	/			08/14/97	1531	JKP	VOA1
85658-4DUP	/	/			08/14/97	1831	JKP	VOA1
85746-4RA	/	/			08/14/97	1905	JKP	VOA1
85746-1DUP	/	/			08/14/97	1941	JKP	VOA1
85690-2	/	/			08/14/97	2202	JKP	VOA1
85541-1	/	/			08/14/97	2312	JKP	VOA1
85541-2	/	/			08/14/97	2348	JKP	VOA1
85541-3	/	/			08/15/97	0023	JKP	VOA1
85656-1	/	/			08/13/97	2222	JKP	VOA1

Analytical Services Inc. Batch QC  
 For Report Number :85785  
 Volatile Organics

Matrix : Soil/Sediment

Batch # 31992

Method : EPA 8260

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	86	89	3	61 - 145	0 - 14
Trichloroethene	94	95	1	71 - 120	0 - 14
Benzene	109	111	2	76 - 127	0 - 11
Toluene	110	109	1	76 - 125	0 - 13
Chlorobenzene	107	109	2	75 - 130	0 - 13

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	92	102	11	61 - 145	0 - 14
Trichloroethene	94	93	1	71 - 120	0 - 14
Benzene	107	109	2	76 - 127	0 - 11
Toluene	107	112	4	76 - 125	0 - 13
Chlorobenzene	103	103	0	75 - 130	0 - 13

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Soil/Sediment Batch # 31992

Method : EPA 8260

## % Recovery Objectives

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S1	1,2-Dichloroethane-d4	70 - 121
S2	Toluene-d8	81 - 117
S3	Ethylbenzene-d10	79 - 115
S4	4-Bromofluorobenzene	74 - 121

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Sample	File	S1	S2	S3	S4	S5	S6
31992BLK1A	>LB721	97	98	97	103		
^^Note: 85657-24							
31992LCS	>LB724	95	103	99	103		
31992LCSD	>LB725	95	103	99	103		
85657-17	>LB731	92	106	104	98		
85657-17MS	>LB769	98	107	105	107		
^^Note: 85657-18							
85657-17MSD	>LB733	92	105	101	99		
^^Note: 85657-26							
85657-19	>LB734	92	104	100	97		
31992BLK1B	>LB752	96	99	98	102		
^^Note: 85785-29							
31992BLK1C	>LB812	98	101	103	111		
85785-18	>LB832	89	102	110	98		
85785-19	>LB833	95	105	111	90		
85785-20	>LB834	89	100	109	101		
85785-21	>LB835	93	102	106	97		
85785-22	>LB836	91	103	107	97		
85785-23	>LB838	88	106	111	95		
85657-16RA	>LB863	96	101	106	101		
^^Note: RA AT LESSER DIL							

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Sample Batch Information  
 Volatile Organics      Method : EPA 8260

Sample ID	Preparation			Preparation Notes	Analysis			Inst #
	Date	Time	By		Date	Time	By	
31992BLK1A	/	/			08/12/97	1042	JKP	VOA1
31992LCS	/	/			08/12/97	1227	JKP	VOA1
31992LCSD	/	/			08/12/97	1301	JKP	VOA1
85657-17	/	/			08/13/97	0121	JKP	VOA1
85657-17MS	/	/			08/13/97	1739	JKP	VOA1
85657-17MSD	/	/			08/13/97	0323	JKP	VOA1
85657-19	/	/			08/13/97	0307	JKP	VOA1
31992BLK1B	/	/			08/13/97	1157	JKP	VOA1
31992BLK1C	/	/			08/15/97	1112	JKP	VOA1
85785-18	/	/			08/16/97	0028	JKP	VOA1
85785-19	/	/			08/16/97	0104	JKP	VOA1
85785-20	/	/			08/16/97	0139	JKP	VOA1
85785-21	/	/			08/16/97	0214	JKP	VOA1
85785-22	/	/			08/16/97	0250	JKP	VOA1
85785-23	/	/			08/16/97	0400	JKP	VOA1
85657-16RA	/	/			08/18/97	1100	JKP	VOA1



Analytical Services Inc. Batch QC  
For Report Number :85785  
Volatile Organics

Matrix : Soil/Sediment

Batch # 32102

Method : EPA 8260

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	110	113	2	61 - 145	0 - 14
Trichloroethene	102	106	3	71 - 120	0 - 14
Benzene	104	105	0	76 - 127	0 - 11
Toluene	109	109	1	76 - 125	0 - 13
Chlorobenzene	112	112	0	75 - 130	0 - 13

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	81	84	3	61 - 145	0 - 14
Trichloroethene	87	88	1	71 - 120	0 - 14
Benzene	99	100	1	76 - 127	0 - 11
Toluene	98	100	2	76 - 125	0 - 13
Chlorobenzene	98	101	2	75 - 130	0 - 13

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Soil/Sediment Batch # 32102

Method : EPA 8260

## % Recovery Objectives

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S1	1,2-Dichloroethane-d4	70 - 121
S2	Toluene-d8	81 - 117
S3	Ethylbenzene-d10	79 - 115
S4	4-Bromofluorobenzene	74 - 121

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Sample	File	S1	S2	S3	S4	S5	S6
32102BLK1A	>LB854	101	97	102	102		
^^Note: 85785-30							
85785-12	>LB874	99	105	103	104		
85785-12MS	>LB875	100	105	104	105		
^^Note: 85785-13							
85785-12MSD	>LB876	99	107	103	106		
^^Note: 85785-31							
32102BLK1B	>LB893	101	103	102	106		
32102LCS	>LB924	102	108	107	105		
32102LCSD	>LB904	102	105	108	105		
32102BLK1B	>SX012	92	95	92	97		
86235-1	>SX013	89	99	93	93		
86235-3	>SX014	90	102	94	91		
86235-4	>SX015	91	100	92	91		
86253-6	>SX016	95	99	93	90		
86235-8	>SX017	94	102	93	92		
86235-9	>SX018	99	110	99	84		
86235-10	>SX019	93	100	95	95		
86235-12	>SX020	95	117	98	82		

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Sample Batch Information  
Volatile Organics      Method : EPA 8260

Sample ID	Preparation			Preparation Notes	Analysis			Inst #
	Date	Time	By		Date	Time	By	
32102BLK1A	/	/			08/18/97	0520	JKP	VOA1
85785-12	/	/			08/18/97	1905	JKP	VOA1
85785-12MS	/	/			08/18/97	1940	JKP	VOA1
85785-12MSD	/	/			08/18/97	2015	JKP	VOA1
32102BLK1B	/	/			08/31/97	2321	JKP	VOA1
32102LCS	/	/			08/20/97	0214	JKP	VOA1
32102LCSD	/	/			08/20/97	0249	JKP	VOA1
86235-1	/	/			09/01/97	0008	JKP	VOA1
86235-3	/	/			09/01/97	0043	JKP	VOA1
86235-4	/	/			09/01/97	0118	JKP	VOA1
86253-6	/	/			09/01/97	0153	JKP	VOA1
86235-8	/	/			09/01/97	0228	JKP	VOA1
86235-9	/	/			09/01/97	0303	JKP	VOA1
86235-10	/	/			09/01/97	0338	JKP	VOA1
86235-12	/	/			09/01/97	0412	JKP	VOA1

Analytical Services Inc. Batch QC  
For Report Number :85785

QC Batch General Information

Batch Number	Analyte	Analysis Method	Matrix	Blank Result	Prep. Method
31528	Ag	EPA 6010	Soil	<	0.0100
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
31528	Ba	EPA 6010	Soil	<	0.0100
31528	Be	EPA 6010	Soil	<	0.0050
31528	Cd	EPA 6010	Soil	<	0.0050
31528	Cr	EPA 6010	Soil	<	0.0100
31528	Cu	EPA 6010	Soil	<	0.0200
31528	Ni	EPA 6010	Soil	<	0.0200
31528	Pb	EPA 6010	Soil	<	0.0250
31528	Sb	EPA 6010	Soil	<	0.0500
^^Note : QC PASSES ON LCS,LCSD,PDS					
31528	Zn	EPA 6010	Soil	<	0.0200
31531	Ag	EPA 6010	Soil	<	0.0100
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
31531	Ba	EPA 6010	Soil	<	0.0100
31531	Be	EPA 6010	Soil	<	0.0050
31531	Cd	EPA 6010	Soil	<	0.0050
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
31531	Cr	EPA 6010	Soil	<	0.0100
31531	Cu	EPA 6010	Soil	<	0.0200
31531	Ni	EPA 6010	Soil	<	0.0200
31531	Pb	EPA 6010	Soil	<	0.0250
31531	Sb	EPA 6010	Soil	<	0.0500
^^Note : BATCH PASSES ON LCS/LCSD/PDS DATA					
31531	Zn	EPA 6010	Soil	<	0.0200
31532	Se	EPA 7740	Soil	<	0.0100
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
31532	Tl	EPA 7841	Soil	<	0.0100
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
31532	As	EPA 7060	Soil	<	0.0100
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
31533	Se	EPA 7740	Aqueous	<	0.0050
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
31533	Tl	EPA 7841	Aqueous	<	0.0020
31533	As	EPA 7060	Aqueous	<	0.0100
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
31537	Ag	EPA 6010	Aqueous	<	0.0100

Analytical Services Inc. Batch QC  
For Report Number :85785

## QC Batch General Information

Batch Number	Analyte	Analysis Method	Matrix	Blank Result	Prep. Method
31537	Ba	EPA 6010	Aqueous <	0.0100	
31537	Be	EPA 6010	Aqueous <	0.0030	
31537	Cd	EPA 6010	Aqueous <	0.0050	
31537	Cr	EPA 6010	Aqueous <	0.0050	
31537	Cu	EPA 6010	Aqueous <	0.0100	
31537	Ni	EPA 6010	Aqueous <	0.0100	
31537	Pb	EPA 6010	Aqueous <	0.0050	
31537	Sb	EPA 6010	Aqueous <	0.0060	
31537	Zn	EPA 6010	Aqueous <	0.0100	
31539	Tl	EPA 7841	Soil <	0.0100	
31539	As	EPA 7060	Soil <	0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
31539	Se	EPA 7740	Soil <	0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
31540	Ag	EPA 6010	Soil <	0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
31540	Ba	EPA 6010	Soil <	0.0100	
31540	Be	EPA 6010	Soil <	0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
31540	Cd	EPA 6010	Soil <	0.0100	
^^Note : QC PASSES ON LCS,LCSD,MSD					
31540	Cr	EPA 6010	Soil <	0.0100	
31540	Ni	EPA 6010	Soil <	0.0200	
31540	Pb	EPA 6010	Soil <	0.0250	
31540	Sb	EPA 6010	Soil <	0.0500	
^^Note : QC PASSES ON LCS,LCSD,PDS					
31540	Zn	EPA 6010	Soil <	0.0200	
31540	Cu	EPA 6010	Soil <	0.0200	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
31850	Hg	EPA 7470	Aqueous <	0.0002	
31851	Hg	EPA 7471	Soil <	0.0002	
31995	%Moist	ASTM D 2216	Soil	0.0000	
31999	CN	EPA 9010	Aq/Solid <	0.0200	

Analytical Services Inc. Batch QC  
For Report Number :85785

Control Information								
Batch Number	Analyte	Method	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range	
31528	Ag	EPA 6010	83	85	2	76 - 124	0 - 30	
31528	Ba	EPA 6010	86	88	2	76 - 124	0 - 30	
31528	Be	EPA 6010	89	91	2	76 - 124	0 - 30	
31528	Cd	EPA 6010	79	80	1	76 - 124	0 - 30	
31528	Cr	EPA 6010	83	87	5	76 - 124	0 - 30	
31528	Cu	EPA 6010	81	82	1	76 - 124	0 - 30	
31528	Ni	EPA 6010	77	81	5	76 - 124	0 - 30	
31528	Pb	EPA 6010	80	84	5	76 - 124	0 - 30	
31528	Sb	EPA 6010	88	91	3	76 - 124	0 - 30	
31528	Zn	EPA 6010	77	81	5	76 - 124	0 - 30	
31531	Ag	EPA 6010	86	91	6	76 - 124	0 - 30	
31531	Ba	EPA 6010	90	93	3	76 - 124	0 - 30	
31531	Be	EPA 6010	85	91	7	76 - 124	0 - 30	
31531	Cd	EPA 6010	77	77	0	76 - 124	0 - 30	
31531	Cr	EPA 6010	81	88	8	76 - 124	0 - 30	
31531	Cu	EPA 6010	81	83	2	76 - 124	0 - 30	
31531	Ni	EPA 6010	80	87	8	76 - 124	0 - 30	
31531	Pb	EPA 6010	77	86	11	76 - 124	0 - 30	
31531	Sb	EPA 6010	80	85	6	76 - 124	0 - 30	
31531	Zn	EPA 6010	78	86	10	76 - 124	0 - 30	
31532	Se	EPA 7740	95	102	7	76 - 124	0 - 30	
31532	Tl	EPA 7841	95	81	16	76 - 124	0 - 30	
31532	As	EPA 7060	76	85	11	76 - 124	0 - 20	
31533	Se	EPA 7740	108	86	23	76 - 124	0 - 20	
31533	Tl	EPA 7841	114	110	4	76 - 124	0 - 20	
31533	As	EPA 7060	93	81	14	76 - 124	0 - 20	
31537	Ag	EPA 6010	90	91	1	76 - 124	0 - 20	
31537	Ba	EPA 6010	89	94	5	76 - 124	0 - 20	
31537	Be	EPA 6010	82	77	6	76 - 124	0 - 20	
31537	Cd	EPA 6010	85	92	8	76 - 124	0 - 20	
31537	Cr	EPA 6010	85	90	6	76 - 124	0 - 20	
31537	Cu	EPA 6010	95	100	5	76 - 124	0 - 20	
31537	Ni	EPA 6010	83	89	7	76 - 124	0 - 20	
31537	Pb	EPA 6010	86	92	7	76 - 124	0 - 20	
31537	Sb	EPA 6010	86	91	6	76 - 124	0 - 20	
31537	Zn	EPA 6010	83	82	1	76 - 124	0 - 20	
31539	Tl	EPA 7841	106	98	8	76 - 124	0 - 30	
31539	As	EPA 7060	107	99	8	76 - 124	0 - 30	
31539	Se	EPA 7740	85	81	5	76 - 124	0 - 30	
31540	Ag	EPA 6010	76	78	3	76 - 124	0 - 30	
31540	Ba	EPA 6010	87	92	6	76 - 124	0 - 30	
31540	Be	EPA 6010	119	118	1	76 - 124	0 - 30	
31540	Cd	EPA 6010	90	90	0	76 - 124	0 - 30	
31540	Cr	EPA 6010	120	100	18	76 - 124	0 - 30	
31540	Ni	EPA 6010	79	82	4	76 - 124	0 - 30	
31540	Pb	EPA 6010	77	78	1	76 - 124	0 - 30	
31540	Sb	EPA 6010	104	110	6	76 - 124	0 - 30	

Analytical Services Inc. Batch QC  
For Report Number :85785

## Lab Control Information

Batch Number	Analyte	Method	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
31540	Zn	EPA 6010	82	78	5	76 - 124	0 - 30
31540	Cu	EPA 6010	77	78	1	76 - 124	0 - 30
31850	Hg	EPA 7470	92	87	6	76 - 124	0 - 20
31851	Hg	EPA 7471	93	93	0	76 - 124	0 - 30
31999	CN	EPA 9010	98	99	1	85 - 115	0 - 30

## Matrix Spike Information

Batch Number	Analyte	Method	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
31528	Ag	EPA 6010	70	72	3	76 - 124	0 - 30
31528	Ba	EPA 6010	91	85	7	76 - 124	0 - 30
31528	Be	EPA 6010	90	88	2	76 - 124	0 - 30
31528	Cd	EPA 6010	80	78	3	76 - 124	0 - 30
31528	Cr	EPA 6010	86	84	2	76 - 124	0 - 30
31528	Cu	EPA 6010	87	93	7	76 - 124	0 - 30
31528	Ni	EPA 6010	81	79	3	76 - 124	0 - 30
31528	Pb	EPA 6010	88	83	6	76 - 124	0 - 30
31528	Sb	EPA 6010	56	73	26	76 - 124	0 - 30
31528	Zn	EPA 6010	95	84	12	76 - 124	0 - 30
31531	Ag	EPA 6010	67	56	18	76 - 124	0 - 30
31531	Ba	EPA 6010	88	90	2	76 - 124	0 - 30
31531	Be	EPA 6010	88	89	1	76 - 124	0 - 30
31531	Cd	EPA 6010	73	72	1	76 - 124	0 - 30
31531	Cr	EPA 6010	88	94	7	76 - 124	0 - 30
31531	Cu	EPA 6010	79	81	3	76 - 124	0 - 30
31531	Ni	EPA 6010	79	87	10	76 - 124	0 - 30
31531	Pb	EPA 6010	84	84	0	76 - 124	0 - 30
31531	Sb	EPA 6010	47	44	7	76 - 124	0 - 30
31531	Zn	EPA 6010	76	86	12	76 - 124	0 - 30
31532	Se	EPA 7740	68	40	52	76 - 124	0 - 30
31532	Tl	EPA 7841	60	48	22	76 - 124	0 - 30
31532	As	EPA 7060	71	66	7	76 - 124	0 - 20
31533	Se	EPA 7740	168	150	11	76 - 124	0 - 20
31533	Tl	EPA 7841	110	113	3	76 - 124	0 - 20
31533	As	EPA 7060	65	67	3	76 - 124	0 - 20
31537	Ag	EPA 6010	91	91	0	76 - 124	0 - 20
31537	Ba	EPA 6010	94	95	1	76 - 124	0 - 20
31537	Be	EPA 6010	78	77	1	76 - 124	0 - 20
31537	Cd	EPA 6010	91	91	0	76 - 124	0 - 20
31537	Cr	EPA 6010	90	89	1	76 - 124	0 - 20
31537	Cu	EPA 6010	99	99	0	76 - 124	0 - 20
31537	Ni	EPA 6010	88	88	0	76 - 124	0 - 20
31537	Pb	EPA 6010	90	89	1	76 - 124	0 - 20
31537	Sb	EPA 6010	90	91	1	76 - 124	0 - 20
31537	Zn	EPA 6010	78	78	0	76 - 124	0 - 20

Analytical Services Inc. Batch QC  
For Report Number :85785

## Matrix Spike Information

Batch Number	Analyte	Method	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
31539	Tl	EPA 7841	102	90	13	76 - 124	0 - 30
31539	As	EPA 7060	38	55	37	76 - 124	0 - 30
31539	Se	EPA 7740	60	102	52	76 - 124	0 - 30
31540	Ag	EPA 6010	94	64	38	76 - 124	0 - 30
31540	Ba	EPA 6010	88	86	2	76 - 124	0 - 30
31540	Be	EPA 6010	59	61	3	76 - 124	0 - 30
31540	Cd	EPA 6010	150	115	26	76 - 124	0 - 30
31540	Cr	EPA 6010	110	88	22	76 - 124	0 - 30
31540	Ni	EPA 6010	94	85	10	76 - 124	0 - 30
31540	Pb	EPA 6010	84	77	9	76 - 124	0 - 30
31540	Zn	EPA 6010	95	84	12	76 - 124	0 - 30
31540	Cu	EPA 6010	66	59	11	76 - 124	0 - 30
31850	Hg	EPA 7470	102	94	8	76 - 124	0 - 20
31851	Hg	EPA 7471	101	97	4	76 - 124	0 - 30
31999	CN	EPA 9010	98	102	4	75 - 125	0 - 30

## Post Digestion Spike Information

Batch Number	Analyte	Method	PDS %Rec	%Recovery Range
31528	Ag	EPA 6010	75	76 - 124
31528	Ba	EPA 6010	90	76 - 124
31528	Be	EPA 6010	96	76 - 124
31528	Cd	EPA 6010	85	76 - 124
31528	Cr	EPA 6010	91	76 - 124
31528	Cu	EPA 6010	88	76 - 124
31528	Ni	EPA 6010	86	76 - 124
31528	Pb	EPA 6010	91	76 - 124
31528	Sb	EPA 6010	79	76 - 124
31528	Zn	EPA 6010	88	76 - 124
31531	Ag	EPA 6010	74	76 - 124
31531	Ba	EPA 6010	94	76 - 124
31531	Be	EPA 6010	91	76 - 124
31531	Cd	EPA 6010	75	76 - 124
31531	Cr	EPA 6010	100	76 - 124
31531	Cu	EPA 6010	88	76 - 124
31531	Ni	EPA 6010	90	76 - 124
31531	Pb	EPA 6010	88	76 - 124
31531	Sb	EPA 6010	90	76 - 124
31531	Zn	EPA 6010	94	76 - 124
31532	Se	EPA 7740	95	76 - 124
31532	Tl	EPA 7841	72	76 - 124
31532	As	EPA 7060	83	76 - 124
31533	Se	EPA 7740	177	76 - 124
31533	Tl	EPA 7841	113	76 - 124
31533	As	EPA 7060	61	76 - 124



Analytical Services Inc. Batch QC  
For Report Number :85785

## Post Digestion Spike Information

Batch Number	Analyte	Method	PDS %Rec	%Recovery Range
31537	Ag	EPA 6010	91	76 - 124
31537	Ba	EPA 6010	95	76 - 124
31537	Be	EPA 6010	77	76 - 124
31537	Cd	EPA 6010	92	76 - 124
31537	Cr	EPA 6010	89	76 - 124
31537	Cu	EPA 6010	100	76 - 124
31537	Ni	EPA 6010	90	76 - 124
31537	Pb	EPA 6010	91	76 - 124
31537	Sb	EPA 6010	91	76 - 124
31537	Zn	EPA 6010	86	76 - 124
31539	Tl	EPA 7841	114	76 - 124
31539	As	EPA 7060	49	76 - 124
31539	Se	EPA 7740	78	76 - 124
31540	Ag	EPA 6010	60	76 - 124
31540	Ba	EPA 6010	91	76 - 124
31540	Be	EPA 6010	66	76 - 124
31540	Cd	EPA 6010	133	76 - 124
31540	Cr	EPA 6010	120	76 - 124
31540	Ni	EPA 6010	110	76 - 124
31540	Pb	EPA 6010	91	76 - 124
31540	Sb	EPA 6010	76	76 - 124
31540	Zn	EPA 6010	91	76 - 124
31540	Cu	EPA 6010	72	76 - 124

## Unspiked Sample Duplicate Information

Batch Number	Analyte	Method	Sample 1 RPD	Sample 2 RPD	RPD Range
31995	%Moist	ASTM D 2216	5	8	0 - 40
31999	CN	EPA 9010	0	0	0 - 30

Sample Batch Information  
Analysis : Ag, Ba, Be, Cd, Cr, Cu, Ni, Pb, Sb, Zn

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
31528BLANK		08/12/97	0730	MTK	36	08/12/97	1046	MLR	ICP1
31528LCS		08/12/97	0730	MTK	36	08/12/97	1050	MLR	ICP1
31528LCSD		08/12/97	0730	MTK	36	08/12/97	1055	MLR	ICP1
85657-3MS		08/12/97	0730	MTK	36	08/12/97	1100	MLR	ICP1
85657-3MSD		08/12/97	0730	MTK	36	08/12/97	1104	MLR	ICP1
85657-3PDS		08/12/97	0730	MTK	36	08/12/97	1109	MLR	ICP1
85657-3DUP		08/12/97	0730	MTK	36	08/12/97	1114	MLR	ICP1
85742-5		08/12/97	0730	MTK	36	08/12/97	1123	MLR	ICP1
85656-2		08/12/97	0730	MTK	36	08/12/97	1127	MLR	ICP1
85657-13		08/12/97	0730	MTK	36	08/12/97	1141	MLR	ICP1
85657-14		08/12/97	0730	MTK	36	08/12/97	1146	MLR	ICP1
85657-15		08/12/97	0730	MTK	36	08/12/97	1151	MLR	ICP1
85657-16		08/12/97	0730	MTK	36	08/12/97	1155	MLR	ICP1
85657-17		08/12/97	0730	MTK	36	08/12/97	1200	MLR	ICP1
85657-19		08/12/97	0730	MTK	36	08/12/97	1205	MLR	ICP1
85657-2		08/12/97	0730	MTK	36	08/12/97	1209	MLR	ICP1
85657-3		08/12/97	0730	MTK	36	08/12/97	1118	MLR	ICP1
85657-4		08/12/97	0730	MTK	36	08/12/97	1214	MLR	ICP1
85657-5		08/12/97	0730	MTK	36	08/12/97	1218	MLR	ICP1
85657-6		08/12/97	0730	MTK	36	08/12/97	1223	MLR	ICP1
85657-7		08/12/97	0730	MTK	36	08/12/97	1236	MLR	ICP1
85657-8		08/12/97	0730	MTK	36	08/12/97	1241	MLR	ICP1
85785-10		08/12/97	0730	MTK	36	08/12/97	1245	MLR	ICP1
85785-11		08/12/97	0730	MTK	36	08/12/97	1250	MLR	ICP1
85785-12		08/12/97	0730	MTK	36	08/12/97	1254	MLR	ICP1
S-BLK		08/12/97	0730	MTK	36	08/12/97	1259	MLR	ICP1
HPS 690703		08/12/97	0730	MTK	36	08/12/97	1303	MLR	ICP1
HPS		08/12/97	0730	MTK	36	08/12/97	1308	MLR	ICP1

Sample Batch Information  
Analysis : Ag, Ba, Be, Cd, Cr, Cu, Ni, Pb, Sb, Zn

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
31531BLANK		08/13/97	0715	MTK	TRACE	08/13/97	1301	MLR	ICP1
31531LCS		08/13/97	0715	MTK	TRACE	08/13/97	1305	MLR	ICP1
31531LCSD		08/13/97	0715	MTK	TRACE	08/13/97	1310	MLR	ICP1
85785-13MS		08/13/97	0715	MTK	TRACE	08/13/97	1314	MLR	ICP1
85785-13MSD		08/13/97	0715	MTK	TRACE	08/13/97	1319	MLR	ICP1
85657-3PDS		08/13/97	0715	MTK	TRACE	08/13/97	1323	MLR	ICP1
85657-3DUP		08/13/97	0715	MTK	TRACE	08/13/97	1328	MLR	ICP1
85795-7		08/13/97	0715	MTK	TRACE	08/13/97	1342	MLR	ICP1
85795-10		08/13/97	0715	MTK	TRACE	08/13/97	1355	MLR	ICP1
85795-9		08/13/97	0715	MTK	TRACE	08/13/97	1400	MLR	ICP1
85785-13		08/13/97	0715	MTK	TRACE	08/13/97	1332	MLR	ICP1
85785-14		08/13/97	0715	MTK	TRACE	08/13/97	1514	MLR	ICP1
85785-2		08/13/97	0715	MTK	TRACE	08/13/97	1519	MLR	ICP1
85785-20		08/13/97	0715	MTK	TRACE	08/13/97	1523	MLR	ICP1
85785-21		08/13/97	0715	MTK	TRACE	08/13/97	1528	MLR	ICP1
85785-22		08/13/97	0715	MTK	TRACE	08/13/97	1532	MLR	ICP1
85785-23		08/13/97	0715	MTK	TRACE	08/13/97	1537	MLR	ICP1
85785-3		08/13/97	0715	MTK	TRACE	08/13/97	1541	MLR	ICP1
85785-4		08/13/97	0715	MTK	TRACE	08/13/97	1545	MLR	ICP1
85785-5		08/13/97	0715	MTK	TRACE	08/13/97	1550	MLR	ICP1
85657-3		08/13/97	0715	MTK	TRACE	08/13/97	1337	MLR	ICP1
S-BLK		08/13/97	0715	MTK	TRACE	08/13/97	1603	MLR	ICP1
HPS 690703		08/13/97	0715	MTK	TRACE	08/13/97	1607	MLR	ICP1
HPS		08/13/97	0715	MTK	TRACE	08/13/97	1611	MLR	ICP1

Sample Batch Information  
Analysis : Se, Tl, As

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
31532BLANK	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
31532LCS	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
31532LCSD	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
85785-13MS	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
85785-13MSD	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
85657-3PDS	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
85657-3DUP	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
85659-5	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
85659-6	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
85659-7	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
85659-8	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
85659-9	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
85694	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
85742-5	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
85785-10	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
85785-11	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
85785-12	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
85785-13	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
85785-14	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
85785-2	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
85785-20	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
85785-21	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
85785-22	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
85785-23	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
85785-3	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
85785-4	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
85657-3	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
S-BLK	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
HPS 690703	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
HPS	As	08/13/97	0715	MTK		08/13/97	1537	MCW	AA1
31532BLANK	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
31532LCS	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
31532LCSD	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
85785-13MS	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
85785-13MSD	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
85657-3PDS	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
85657-3DUP	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
85659-5	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
85659-6	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
85659-7	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
85659-8	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
85659-9	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
85694	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
85742-5	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
85785-10	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
85785-11	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
85785-12	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
85785-13	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1

Sample Batch Information  
Analysis : Se, Tl, As

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
85785-14	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
85785-2	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
85785-20	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
85785-21	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
85785-22	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
85785-23	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
85785-3	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
85785-4	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
85657-3	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
S-BLK	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
HPS 690703	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
HPS	Se	08/13/97	0715	MTK		08/14/97	0937	MCW	AA1
31532BLANK	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
31532LCS	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
31532LCSD	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
85785-13MS	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
85785-13MSD	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
85657-3PDS	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
85657-3DUP	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
85659-5	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
85659-6	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
85659-7	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
85659-8	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
85659-9	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
85694	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
85742-5	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
85785-10	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
85785-11	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
85785-12	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
85785-13	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
85785-14	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
85785-2	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
85785-20	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
85785-21	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
85785-22	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
85785-23	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
85785-3	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
85785-4	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
85657-3	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
S-BLK	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
HPS 690703	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1
HPS	Tl	08/13/97	0715	MTK		08/14/97	1400	MCW	AA1

Sample Batch Information  
Analysis : Se, Tl, As

Sample ID	Tag	Preparation Date	Time	By	Preparation Notes	Analysis Date	Time	By	Inst
31533BLANK	Se	08/13/97	0700	CJC		08/14/97	0837	MCW	AA1
31533LCS	Se	08/13/97	0700	CJC		08/14/97	0837	MCW	AA1
31533LCSD	Se	08/13/97	0700	CJC		08/14/97	0837	MCW	AA1
85785-16MS	Se	08/13/97	0700	CJC		08/14/97	0837	MCW	AA1
85785-16MSD	Se	08/13/97	0700	CJC		08/14/97	0837	MCW	AA1
85785-17PDS	Se	08/13/97	0700	CJC		08/14/97	0837	MCW	AA1
85785-17DUP	Se	08/13/97	0700	CJC		08/14/97	0837	MCW	AA1
85703	Se	08/13/97	0700	CJC		08/14/97	0837	MCW	AA1
85731	Se	08/13/97	0700	CJC		08/14/97	0837	MCW	AA1
85746-2	Se	08/13/97	0700	CJC		08/14/97	0837	MCW	AA1
85774	Se	08/13/97	0700	CJC		08/14/97	0837	MCW	AA1
85785-16	Se	08/13/97	0700	CJC		08/14/97	0837	MCW	AA1
85785-17	Se	08/13/97	0700	CJC		08/14/97	0837	MCW	AA1
31533BLANK	Pb	08/13/97	0700	CJC		08/14/97	0821	MCW	AA2
31533LCS	Pb	08/13/97	0700	CJC		08/14/97	0827	MCW	AA2
31533LCSD	Pb	08/13/97	0700	CJC		08/14/97	0833	MCW	AA2
85785-16MS	Pb	08/13/97	0700	CJC		08/14/97	0840	MCW	AA2
85785-16MSD	Pb	08/13/97	0700	CJC		08/14/97	0846	MCW	AA2
85785-17PDS	Pb	08/13/97	0700	CJC		08/14/97	0852	MCW	AA2
85785-17DUP	Pb	08/13/97	0700	CJC		08/14/97	0858	MCW	AA2
85703	Pb	08/13/97	0700	CJC		08/14/97	0821	MCW	AA2
85731	Pb	08/13/97	0700	CJC		08/14/97	0821	MCW	AA2
85746-2	Pb	08/13/97	0700	CJC		08/14/97	0805	MCW	AA2
85774	Pb	08/13/97	0700	CJC		08/14/97	0821	MCW	AA2
85785-16	Pb	08/13/97	0700	CJC		08/14/97	0911	MCW	AA2
85785-17	Pb	08/13/97	0700	CJC		08/14/97	0917	MCW	AA2
31533BLANK	Tl	08/13/97	0700	CJC		08/14/97	1210	MCW	AA2
31533LCS	Tl	08/13/97	0700	CJC		08/14/97	1216	MCW	AA2
31533LCSD	Tl	08/13/97	0700	CJC		08/14/97	1222	MCW	AA2
85785-16MS	Tl	08/13/97	0700	CJC		08/14/97	1228	MCW	AA2
85785-16MSD	Tl	08/13/97	0700	CJC		08/14/97	1235	MCW	AA2
85785-17PDS	Tl	08/13/97	0700	CJC		08/14/97	1241	MCW	AA2
85785-17DUP	Tl	08/13/97	0700	CJC		08/14/97	1247	MCW	AA2
85746-2	Tl	08/13/97	0700	CJC		08/14/97	1324	MCW	AA2
85774	Tl	08/13/97	0700	CJC		08/14/97	1253	MCW	AA2
85785-16	Tl	08/13/97	0700	CJC		08/14/97	1259	MCW	AA2
85785-17	Tl	08/13/97	0700	CJC		08/14/97	1318	MCW	AA2
31533BLANK	As	08/13/97	0700	CJC		08/15/97	0754	MCW	AA1
31533LCS	As	08/13/97	0700	CJC		08/15/97	0754	MCW	AA1
31533LCSD	As	08/13/97	0700	CJC		08/15/97	0754	MCW	AA1
85785-16MS	As	08/13/97	0700	CJC		08/15/97	0754	MCW	AA1
85785-16MSD	As	08/13/97	0700	CJC		08/15/97	0754	MCW	AA1
85785-17PDS	As	08/13/97	0700	CJC		08/15/97	0754	MCW	AA1
85785-17DUP	As	08/13/97	0700	CJC		08/15/97	0754	MCW	AA1
85703	As	08/13/97	0700	CJC		08/15/97	0754	MCW	AA1
85731	As	08/13/97	0700	CJC		08/15/97	0754	MCW	AA1
85746-2	As	08/13/97	0700	CJC		08/15/97	0754	MCW	AA1
85774	As	08/13/97	0700	CJC		08/15/97	0754	MCW	AA1

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Sample Batch Information  
Analysis : Se, Tl, As

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Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
85785-16	As	08/13/97	0700	CJC		08/15/97	0754	MCW	AA1
85785-17	As	08/13/97	0700	CJC		08/15/97	0754	MCW	AA1

Sample Batch Information  
Analysis : Ag, Ba, Be, Cd, Cr, Cu, Ni, Pb, Sb, Zn

Sample ID	Preparation			Preparation Notes	Analysis			Inst
	Tag	Date	Time By		Date	Time	By	
31537BLANK		08/14/97	0635 MTK	TRACE	08/14/97	1223	MLR	ICP2
31537LCS		08/14/97	0635 MTK	TRACE	08/14/97	1226	MLR	ICP2
31537LCSD		08/14/97	0635 MTK	TRACE	08/14/97	1229	MLR	ICP2
85863MS		08/14/97	0635 MTK	TRACE	08/14/97	1232	MLR	ICP2
85863MSD		08/14/97	0635 MTK	TRACE	08/14/97	1235	MLR	ICP2
85863PDS		08/14/97	0635 MTK	TRACE	08/14/97	1238	MLR	ICP2
85863DUP		08/14/97	0635 MTK	TRACE	08/14/97	1241	MLR	ICP2
85854-1		08/14/97	0635 MTK	TRACE	08/14/97	1248	MLR	ICP2
85854-2		08/14/97	0635 MTK	TRACE	08/14/97	1251	MLR	ICP2
85797-11		08/14/97	0635 MTK	TRACE	08/14/97	1300	MLR	ICP2
85797-12		08/14/97	0635 MTK	TRACE	08/14/97	1303	MLR	ICP2
85785-16		08/14/97	0635 MTK	TRACE	08/14/97	1307	MLR	ICP2
85785-17		08/14/97	0635 MTK	TRACE	08/14/97	1310	MLR	ICP2
85803-10		08/14/97	0635 MTK	TRACE	08/14/97	1313	MLR	ICP2
85803-5		08/14/97	0635 MTK	TRACE	08/14/97	1316	MLR	ICP2
85803-6		08/14/97	0635 MTK	TRACE	08/14/97	1319	MLR	ICP2
85803-7		08/14/97	0635 MTK	TRACE	08/14/97	1322	MLR	ICP2
85803-8		08/14/97	0635 MTK	TRACE	08/14/97	1326	MLR	ICP2
85803-9		08/14/97	0635 MTK	TRACE	08/14/97	1333	MLR	ICP2
85797-11		08/14/97	0635 MTK	D/D	08/14/97	1356	MLR	ICP2
85797-12		08/14/97	0635 MTK	D/D	08/14/97	1359	MLR	ICP2



Sample Batch Information  
Analysis : Tl, As, Se

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
85657-18	Tl	08/14/97	0605	MTK		08/14/97	1514	MCW	AA2
85824-1	Tl	08/14/97	0605	MTK		08/14/97	1609	MCW	AA2
31539BLANK	Tl	08/14/97	0605	MTK		08/14/97	1430	MCW	AA2
31539LCS	Tl	08/14/97	0605	MTK		08/14/97	1437	MCW	AA2
31539LCSD	Tl	08/14/97	0605	MTK		08/14/97	1443	MCW	AA2
85657-18MS	Tl	08/14/97	0605	MTK		08/14/97	1449	MCW	AA2
85657-18MSD	Tl	08/14/97	0605	MTK		08/14/97	1455	MCW	AA2
85657-18PDS	Tl	08/14/97	0605	MTK		08/14/97	1501	MCW	AA2
85657-18DUP	Tl	08/14/97	0605	MTK		08/14/97	1508	MCW	AA2
85785-5	Tl	08/14/97	0605	MTK		08/14/97	1520	MCW	AA2
85785-6	Tl	08/14/97	0605	MTK		08/14/97	1539	MCW	AA2
85785-7	Tl	08/14/97	0605	MTK		08/14/97	1545	MCW	AA2
85785-8	Tl	08/14/97	0605	MTK		08/14/97	1551	MCW	AA2
85785-9	Tl	08/14/97	0605	MTK		08/14/97	1609	MCW	AA2
85657-18	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
85824-1	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
31539BLANK	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
31539LCS	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
31539LCSD	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
85657-18MS	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
85657-18MSD	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
85657-18PDS	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
85657-18DUP	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
85785-5	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
85785-6	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
85785-7	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
85785-8	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
85785-9	As	08/14/97	0605	MTK		08/15/97	1159	MCW	AA1
85657-18	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
85824-1	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
31539BLANK	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
31539LCS	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
31539LCSD	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
85657-18MS	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
85657-18MSD	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
85657-18PDS	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
85657-18DUP	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
85785-5	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
85785-6	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
85785-7	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
85785-8	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1
85785-9	Se	08/14/97	0605	MTK		08/18/97	0733	MCW	AA1

Sample Batch Information  
Analysis : Ag, Ba, Be, Cd, Cr, Ni, Pb, Sb, Zn, Cu

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
85824-1		08/14/97	0605	MTK	TRACE	08/14/97	1120	MLR	ICP1
31540BLANK		08/14/97	0605	MTK	TRACE	08/14/97	1039	MLR	ICP1
31540LCS		08/14/97	0605	MTK	TRACE	08/14/97	1044	MLR	ICP1
31540LCSD		08/14/97	0605	MTK	TRACE	08/14/97	1048	MLR	ICP1
85657-18MS		08/14/97	0605	MTK	TRACE	08/14/97	1053	MLR	ICP1
85657-18MSD		08/14/97	0605	MTK	TRACE	08/14/97	1057	MLR	ICP1
85657-18PDS		08/14/97	0605	MTK	TRACE	08/14/97	1102	MLR	ICP1
85657-18DUP		08/14/97	0605	MTK	TRACE	08/14/97	1107	MLR	ICP1
85657-18		08/14/97	0605	MTK	TRACE	08/14/97	1111	MLR	ICP1
85785-6		08/14/97	0605	MTK	TRACE	08/14/97	1146	MLR	ICP1
85785-7		08/14/97	0605	MTK	TRACE	08/14/97	1150	MLR	ICP1
85785-8		08/14/97	0605	MTK	TRACE	08/14/97	1155	MLR	ICP1
85785-9		08/14/97	0605	MTK	TRACE	08/14/97	1159	MLR	ICP1
85864		08/14/97	0605	MTK	TRACE	08/14/97	1116	MLR	ICP1

Sample Batch Information  
Analysis : Hg

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
31850BLANK	HG	08/13/97	0645	FBS		08/13/97	1024	FBS	HG1
31850LCS	HG	08/13/97	0645	FBS		08/13/97	1027	FBS	HG1
31850LCSD	HG	08/13/97	0645	FBS		08/13/97	1029	FBS	HG1
85785-16MS	HG	08/13/97	0645	FBS		08/13/97	1032	FBS	HG1
85785-16MSD	HG	08/13/97	0645	FBS		08/13/97	1034	FBS	HG1
85774DUP	HG	08/13/97	0645	FBS		08/13/97	1112	FBS	HG1
85344AT1	HG	08/13/97	0645	FBS		08/13/97	1041	FBS	HG1
85731	HG	08/13/97	0645	FBS		08/13/97	1043	FBS	HG1
85742-1	HG	08/13/97	0645	FBS		08/13/97	1051	FBS	HG1
85742-3	HG	08/13/97	0645	FBS		08/13/97	1053	FBS	HG1
85742-4	HG	08/13/97	0645	FBS		08/13/97	1055	FBS	HG1
85746-2	HG	08/13/97	0645	FBS		08/13/97	1058	FBS	HG1
85769	HG	08/13/97	0645	FBS		08/13/97	1100	FBS	HG1
85774	HG	08/13/97	0645	FBS		08/13/97	1102	FBS	HG1
85785-16	HG	08/13/97	0645	FBS		08/13/97	1036	FBS	HG1
85785-17	HG	08/13/97	0645	FBS		08/13/97	1039	FBS	HG1
85788-1	HG	08/13/97	0645	FBS		08/13/97	1105	FBS	HG1
85792-1	HG	08/13/97	0645	FBS		08/13/97	1107	FBS	HG1
85826-3	HG	08/13/97	0645	FBS		08/13/97	1110	FBS	HC

Sample Batch Information  
Analysis : Hg

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
31851BLANK	HG	08/13/97	0930	MB		08/14/97	0837	FBS	HG1
31851LCS	HG	08/13/97	0930	MB		08/14/97	0840	FBS	HG1
31851LCSD	HG	08/13/97	0930	MB		08/14/97	0842	FBS	HG1
85785-13MS	HG	08/13/97	0930	MB		08/14/97	0844	FBS	HG1
85785-13MSD	HG	08/13/97	0930	MB		08/14/97	0847	FBS	HG1
85785-2DUP	HG	08/13/97	0930	MB		08/14/97	1128	FBS	HG1
85785-2	HG	08/12/97	0930	MB		08/14/97	0902	FBS	HG1
85785-3	HG	08/12/97	0930	MB		08/14/97	0909	FBS	HG1
85785-4	HG	08/12/97	0930	MB		08/14/97	0916	FBS	HG1
85785-5	HG	08/12/97	0930	MB		08/14/97	0928	FBS	HG1
85785-6	HG	08/12/97	0930	MB		08/14/97	0937	FBS	HG1
85785-10	HG	08/12/97	0930	MB		08/14/97	1010	FBS	HG1
85785-11	HG	08/12/97	0930	MB		08/14/97	1022	FBS	HG1
85785-13	HG	08/12/97	0930	MB		08/14/97	0849	FBS	HG1
85785-12	HG	08/12/97	0930	MB		08/14/97	1033	FBS	HG1
85785-14	HG	08/12/97	0930	MB		08/14/97	1040	FBS	HG1
85785-20	HG	08/12/97	0930	MB		08/14/97	1052	FBS	HG1
85785-21	HG	08/12/97	0930	MB		08/14/97	1059	FBS	HG1
85785-22	HG	08/12/97	0930	MB		08/14/97	1109	FBS	HG1
85785-23	HG	08/12/97	0930	MB		08/14/97	1121	FBS	HG1
85785-7	HG	08/12/97	0930	MB		08/14/97	0944	FBS	HG1
85785-8	HG	08/12/97	0930	MB		08/14/97	0956	FBS	HG1
85785-9	HG	08/12/97	0930	MB		08/14/97	1003	FBS	HG1

Sample Batch Information  
Analysis : %Moist

Sample ID	Tag	Preparation		Preparation Notes	Analysis			Inst
		Date	Time By		Date	Time	By	
85785-2		/	/		08/12/97	1440	JK	
85785-3		/	/		08/12/97	1440	JK	
85785-4		/	/		08/12/97	1440	JK	
85785-5		/	/		08/12/97	1440	JK	
85785-6		/	/		08/12/97	1440	JK	
85785-7		/	/		08/12/97	1440	JK	
85785-8		/	/		08/12/97	1440	JK	
85785-9		/	/		08/12/97	1440	JK	
85785-10		/	/		08/12/97	1440	JK	
85785-11		/	/		08/12/97	1440	JK	
85785-12		/	/		08/12/97	1440	JK	
85785-13		/	/		08/12/97	1440	JK	
85785-14		/	/		08/12/97	1440	JK	
85785-18		/	/		08/12/97	1440	JK	
85785-19		/	/		08/12/97	1440	JK	
85785-20		/	/		08/12/97	1440	JK	
85785-21		/	/		08/12/97	1440	JK	
85785-22		/	/		08/12/97	1440	JK	
85785-23		/	/		08/12/97	1440	JK	
85785-22DUP		/	/		08/12/97	1440	JK	
85785-23DUP		/	/		08/12/97	1440	JK	

Sample Batch Information  
Analysis : CN

Sample ID	Tag	Preparation			Preparation	Analysis			Inst
		Date	Time	By	Notes	Date	Time	By	
31999BLK		08/13/97	0720	ARS	MIDI-DIST	08/13/97	1015	ARS	GENE5
31999LCS		08/13/97	0720	ARS	MIDI-DIST	08/13/97	1015	ARS	GENE5
31999LCSD		08/13/97	0720	ARS	MIDI-DIST	08/13/97	1015	ARS	GENE5
85785-12MS		08/13/97	0720	ARS	AKA 85785-13B	08/13/97	1015	ARS	GENE5
85785-12MSD		08/13/97	0720	ARS	AKA 85785-13B	08/13/97	1015	ARS	GENE5
85785-3		08/13/97	0720	ARS	MIDI-DIST	08/13/97	1015	ARS	GENE5
85785-4		08/13/97	0720	ARS	MIDI-DIST	08/13/97	1015	ARS	GENE5
85785-5		08/13/97	0720	ARS	MIDI-DIST	08/13/97	1015	ARS	GENE5
85785-6		08/13/97	0720	ARS	MIDI-DIST	08/13/97	1015	ARS	GENE5
85785-7		08/13/97	0720	ARS	MIDI-DIST	08/13/97	1015	ARS	GENE5
85785-2		08/13/97	0940	ARS	MIDI-DIST	08/13/97	1225	ARS	GENE5
31999CAL5		08/13/97	0940	ARS	MIDI-DIST	08/13/97	1225	ARS	GENE5
31999CAL15		08/13/97	0940	ARS	MIDI-DIST	08/13/97	1225	ARS	GENE5
85785-8		08/13/97	0940	ARS	MIDI-DIST	08/13/97	1225	ARS	GENE5
85785-9		08/13/97	0940	ARS	MIDI-DIST	08/13/97	1225	ARS	GENE5
85785-10		08/13/97	0940	ARS	MIDI-DIST	08/13/97	1225	ARS	GENE5
85785-11		08/13/97	0940	ARS	MIDI-DIST	08/13/97	1225	ARS	GENE5
85785-12		08/13/97	0940	ARS	MIDI-DIST	08/13/97	1225	ARS	GENE5
85785-14		08/13/97	0940	ARS	MIDI-DIST	08/13/97	1225	ARS	GENE5
85-20		08/13/97	0940	ARS	MIDI-DIST	08/13/97	1225	ARS	GENE5
85785-21		08/13/97	1155	ARS	MIDI-DIST	08/13/97	1400	ARS	GENE5
85785-22		08/13/97	1155	ARS	MIDI-DIST	08/13/97	1400	ARS	GENE5
85785-23		08/13/97	1155	ARS	MIDI-DIST	08/13/97	1400	ARS	GENE5
85785-16		08/13/97	1155	ARS	MIDI-DIST	08/13/97	1400	ARS	GENE5
85785-16DUP		08/13/97	1155	ARS	MIDI-DIST	08/13/97	1400	ARS	GENE5
85785-17		08/13/97	1155	ARS	MIDI-DIST	08/13/97	1400	ARS	GENE5
85785-17DUP		08/13/97	1155	ARS	MIDI-DIST	08/13/97	1400	ARS	GENE5

Project Number TE0320.015

Project Location Saoff B'Han, AZ

Laboratory Asl

Sampler(s)/Affiliation J. HUGHES / E! n

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID
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SAMPLE BOTTLE / CONTAINER DESCRIPTION

CPA 5270  
Boa Grads

SPM + Gamm  
Gordas

Cyanine  
BozGrass

TOTAL

[illegible]

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/  
Containers

17

Relinquished by: \_\_\_\_\_  
Received by: \_\_\_\_\_

Organization: GEM (TAMPA)  
Organization: ASI

Date 8/8/93 Time             
Date 5/8/97 Time U:21

Seal Intact?  
Yes No N/A

Relinquished by: Jill Warner  
Received by: Wanda H. Hall

Organization: AST  
Organization: BST

Date 8/8/97 Time 2:15  
Date 8/11/97 Time 09:00

Seal Intact?  
Yes No N/A

Special Instructions/Remarks:

DIRECT ANY LAN QUESTIONS TO KATHY THAMAN AT 8139611921

ice, seal intact, temp = 9C  
pH = 1 (metals) 12 (Cu)

Asi common \$1.8

Delivery Method:

☐ In Person☐ Common Carrier☒ Lab Courier☐ Other

## SPECIAL

Project Number TF0320.015

Project Location Gross, B'Ham ALABAMA

Laboratory As1

Sampler(s)/Affiliation J. Hughes / GIM

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID
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SAMPLE BOTTLE / CONTAINER DESCRIPTION

TOTAL

[illegible]

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/  
Containers

23

Relinquished by: \_\_\_\_\_  
Received by: \_\_\_\_\_

Organization: GIM (TAMPA)  
Organization: ASF

Date 8/1/32 Time  
Date 8/18/37 Time 4:45

	Seal Intact?
Yes	No N/A

Relinquished by: Jill Warner  
Received by: Nancy A. Small

Organization: AST  
Organization: AST

Date 8/8/97 Time 2115  
Date 8/11/97 Time 0900

Seal Intact?  
(Yes) No N/A

Special Instructions/Remarks:

DIRECT ANY/ALL QUESTIONS TO KATHY THALMAN AT 813 961 1921

ice, seal intact, temp = 9  
pH = 1 (metals) 12 (C.V)

Asl Coored # 4/11

Delivery Method: ☐ In Person

☒ Common Carrier FED EX

☐ Lab Courier      ☐ Other☐ Other

**SPECIFY**

**SPECIFY**





Project Number TF0320.015

Project Location Gloss, B'ham ALABAMA

Laboratory ASL

Sampler(s)/Affiliation J. Hughes (GSM)

SAMPLE IDENTITY		Code	Date/Time Sampled	Lab ID	SAMPLE BOTTLE / CONTAINER DESCRIPTION										TOTAL
70806	LD-23-TB0001	L	8/6/97 830												3
70806	LD-23-SL0022 (0-2)	S	8/7/97 740												4
70806	LD-23-SL0023 (12-14)	S	930												4
70806	LD-23-SL0023 (24-26)	S	1020												4
70806	LD-23-SL0021 (20-22)	S	1430												4
70806	LD-23-SL0021 (14-16)	S	1445												4
70806	LD-23-SL0021	S	8/6/97 -												4
970807	LD-38-SL0030 (9-11)	S	8/7/97 915												1
970807	LD-38-SL0030 (0-15)	S	1000												1
970807	LD-38-SL0029 (15-17)	S	1220												1
970807	LD-38-SL0029 (11-14)	S	1230												1
970807	LD-38-SL0028 (8-10)	S	1420												1
970807	LD-38-SL0028 (8-10)	S	1420												1
970807	LD-38-SL0028 (13-15)	S	1625												1
			8/7/97												+ 34

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers

34

Relinquished by: <u>[Signature]</u>	Organization: <u>GSM (TAMPA)</u>	Date: <u>8/8/97</u> Time: <u>4:15</u>	Seal Intact? Yes No N/A
Received by: <u>[Signature]</u>	Organization: <u>ASL</u>	Date: <u>8/8/97</u> Time: <u>4:15</u>	Seal Intact? Yes No N/A
Relinquished by: <u>Jill Warner</u>	Organization: <u>ASL</u>	Date: <u>8/8/97</u> Time: <u>21:15</u>	Seal Intact? Yes No N/A
Received by: <u>[Signature]</u>	Organization: <u>ASL</u>	Date: <u>8/11/97</u> Time: <u>0900</u>	Seal Intact? Yes No N/A

Special Instructions/Remarks:

DIRECT ANY ? ALL QUESTIONS TO KATHI THALMAN AT 813961192  
ASL CORNER # 414

ice, seal intact, temp = 9C  
pH = 1 (metals) 12 (Cu)

Delivery Method: ☐ In Person ☒ Common Carrier FedEx ☒ Lab Courier ☐ Other

SPECIFY

SPECIFY

0063



**VOLUME III**  
**IDW SOIL AND/OR ROCK**

# SLOSS INDUSTRIES

## DATA VALIDATION CHECKLIST

PROJECT NAME  
PROJECT NUMBER  
SAMPLE  
IDENTIFICATION(S)

Sloss Industries
TF320.015
970822-LD-1W-SL0021
970822-LD-1W-SL0035A
970822-LD-1W-SL0035A/B
970822-LD-1W-SL0037
970822-LD-1W-SL0033A
970822-LD-1W-SL0033A/B/C
970822-LD-1W-SL0031A
970822-LD-1W-SL0031A/B/C
970822-LD-1W-SL0032
970822-LD-1W-SL0029
970822-LD-1W-SL9999A
970822-LD-1W-SL9999A/B
970822-LD-1W-TB0001
August 22, 1997
Joe Hughes, David Page, Kathy Thalman
Waste Soil
Analytical Services, Inc.
Cyanide (9010), PPT Metals, 8260, 8270
Geraghty & Miller, Inc./Level II
86235
November 4, 1997

SAMPLE DATE (S)  
SAMPLE TEAM  
SAMPLE MATRIX  
ANALYZING LABORATORY  
ANALYSES REQUESTED  
QA REPORTING LEVEL  
LABORATORY REPORT NO.  
VALIDATION DATE

## FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: *	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Sampling dates noted		X		X	
2. Sampling team indicated		X		X	
3. Sampling identification traceable to location collected		X		X	
4. Sample location		X		X	
5. Sample depth for soils		X		X	
6. Collection technique (bailer, pump, etc.)		X		X	
7. Field sample preparation techniques		X		X	
8. Sample type (grab, composite)		X		X	
9. Sample container type		X		X	
10. Preservation methods		X		X	
11. Chain-of-custody form completed		X		X	
12. Required analytical methods requested		X		X	
13. Field (water and soil) sample logs completed properly and signed		X		X	
14. Number and type of field QC samples collected (blanks, replicates, splits, etc.)		X		X <sup>(1)</sup>	
15. Field equipment calibration	X				X
16. Field equipment decontamination		X		X	
17. Sample shipping		X		X	
18. Laboratory task order		X		X	

\* Field sampling logs = water and/or soil/sediment sampling logs

COMMENTS:

1) No Field QC samples collected for waste drums

**ANALYTICAL DATA PACKAGE DOCUMENTATION  
GENERAL INFORMATION**

ALL QA REPORTING LEVELS:	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Method of analysis		X		X	
4. Detection limits of analysis		X		X	
5. Master tracking list		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preparation/extraction date		X		X	
9. Sample analysis date		X		X	
10. Copy of chain-of-custody form signed by lab sample custodian		X		X	
11. Narrative summary of QA or sample problems provided		X		X	

QA - quality assurance

**COMMENTS :**

All analytical data were reported as Geraghty & Miller Level II data deliverables

**INORGANIC ANALYSES  
TOTAL METALS METHODS**

QA REPORTING LEVEL II REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Holding times		X		X	
2. Detection limits		X		X	
3. Calibration curve standards	X				X
4. Initial calibration verification %R	X				X
5. Continuing calibration verification %R	X				X
6. Blanks					
A. Preparation and calibration blanks		X		X	
B. Equipment rinsate blanks	X				X
C. Field blanks	X				X
7. Interference check sample %R (ICP only)	X				X
8. Dilution check sample %R (ICP only)	X				X
9. Laboratory control sample %R		X		X	
10. Matrix spike %R		X		X	
11. Lab duplicate or MSD %R and RPD		X	X		
12. LCS duplicate %R and RPD		X		X	
13. Post-digestion analytical spike (FAA only)		X	X		
14. Field duplicate comparison	X				X
15. Total and dissolved metals comparison	X				X

%R - percent recovery

RPD - relative percent difference

MSD - matrix spike duplicate

ICP - inductively coupled plasma atomic emission spectroscopy

FAA - furnace atomic absorption

NA - not applicable or not analyzed

**COMMENTS:**

This section was completed for Priority Pollutant Metals. Sloss soil data were qualified for each of the corresponding analytical batches where MS/MSD and PDS recoveries did not meet the control limit criteria.

Analytical Batch	Analyte
32165	Ag, Ba, Be, Cd, Cr, Cu, Ni, Pb, Sb, Zn

Sloss soil data were qualified for each of the corresponding analytical batches where MS/MSD recoveries did not meet the control limit criteria.

32178	Se, Tl,
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All qualified soil analytical results are summarized in the attached Table.

**INORGANIC ANALYSES  
WET CHEMISTRY METHODS**

QA REPORTING LEVEL II REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Holding times		X		X	
2. Detection limits		X		X	
3. Calibration curve standards	X				X
4. Initial calibration verification %R	X				X
5. Continuing calibration verification %R	X				X
6. Blanks					
A. Preparation and calibration blanks		X		X	
B. Equipment rinsate blanks	X				X
C. Field blanks	X				X
7. Laboratory control sample %R		X		X	
8. Matrix spike %R		X		X	
9. Lab duplicate or MSD %R and RPD		X		X	
10. LCS duplicate %R and RPD		X		X	
11. Field duplicate comparison	X				X

%R - percent recovery

LCS - laboratory control sample duplicate

RPD - relative percent difference

NA - not applicable or not analyzed

MSD - matrix spike duplicate

**COMMENTS:**

This section was completed for cyanide data. Performance was acceptable. No sample qualification was necessary.



**ORGANIC ANALYSES  
VOLATILE ORGANIC COMPOUNDS**

QA REPORTING LEVEL II - REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
1. Holding times		X		X	
2. Detection limits		X		X	
3. Blanks					
A. Water blanks (VOCs)		X		X	
B. Equipment rinsate blanks		X		X	
C. Field Blanks		X		X	
D. Trip blanks		X		X	
4. Instrument tune and performance check	X				X
5. Initial calibration RRFs and %RSDs	X				X
6. Continuing calibration RRFs and %Ds	X				X
7. Matrix spike (MS) %R		X		X	
8. Matrix spike duplicate (MSD) %R		X		X	
9. Sample specific lab duplicate (optional)	X				X
10. MS/MSD or lab duplicate precision (RPD)		X		X	
11. Reagent water spike (BS)		X		X	
12. Reagent water spike duplicate (BSD)		X		X	
13. BS/BSD precision (RPD)		X		X	
14. Laboratory control sample (optional)		X		X	
15. Surrogate spike recoveries		X		X	
16. Internal standard retention times and areas	X				X
17. Compound identification and quantitation					
A. Reconstructed ion chromatograms	X				X
B. Quantitation reports	X				X
18. TIC search (optional)	X				X
19. Field duplicate comparison	X				X

VOCs - volatile organic compounds

RRF - relative response factor

% RSD - percent relative standard deviation

%D - percent drift

%R - percent recovery

RPD - relative percent difference

BS - blank spike

BSD - blank spike duplicate

TIC - tentatively identified compound

COMMENTS: This section was completed for volatiles Method 8260. Performance was acceptable. No sample qualification was necessary.

**ORGANIC ANALYSES  
SEMIVOLATILE ORGANIC COMPOUNDS**

QA REPORTING LEVEL II REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	

**GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)**

**1. Holding times**

A. Extraction holding time

B. Analysis holding time

**2. Detection limits**

**3. Blanks**

A. Water blanks

B. Extraction blanks

C. Equipment rinsate blanks

D. Field Blanks

**4. Instrument tune and performance check**

**5. Initial calibration RRFs and %RSDs**

**6. Continuing calibration RRFs and %Ds**

**7. Matrix spike (MS) %R**

**8. Matrix spike duplicate (MSD) %R**

**9. Sample specific lab duplicate (optional)**

**10. MS/MSD or lab duplicate precision (RPD)**

**11. Laboratory control sample (LCS)**

**12. LCS duplicate (LCSD)**

**13. LCS/LCSD precision (RPD)**

**14. Surrogate spike recoveries**

**15. Internal standard retention times and areas**

**16. Compound identification and quantitation**

A. Reconstructed ion chromatograms

B. Quantitation reports

**17. TIC search (optional)**

**18. Field duplicate comparison**

		X		X	
		X		X	
		X		X	
		X		X	
X					X
X					X
X					X
		X		X	
		X		X	
X					X
		X		X	
		X		X	
		X		X	
		X		X	
X					X
X					X
X					X
X					X

SVOCs - semivolatile organic compounds  
RRF - relative response factor  
% RSD - percent relative standard deviation

%D - percent drift  
%R - percent recovery  
RPD - relative percent difference

TIC - tentatively identified compound

COMMENTS: This section was completed for semivolatile Method 8270. Performance was acceptable. No sample qualification was necessary.

A summary of qualified analytical results associated with this data set are presented in the attached table.

VALIDATION PERFORMED BY: Cynthia Arnold

SIGNATURE: Cindy Arnold

DATE: 11/10/97

**Summary of Qualitative Analytical Results  
for Waste Soil  
ASI Data Package 86235  
Sloss Industries, Birmingham, AL**

Page 1 of 4

<b>G &amp; M Sample ID.</b>	<b>Analyte</b>	<b>Concentration Detected</b>	<b>Qualifier</b>	<b>Reasons for Qualification</b>
<b>ASI Laboratory Report No 86235</b> 970822-LD-1W-SL0021	Antimony	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Arsenic	BDL	UJ	MS/MSD out of control limit criteria
	Barium	45 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Beryllium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Cadmium	1.7 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Chromium	7.9 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Copper	13 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Lead	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Nickel	15 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Selenium	BDL	UJ	MS/MSD out of control limit criteria
	Silver	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Zinc	35 mg/Kg	J	MS/MSD and PDS out of control limit criteria
970822-LD-1W-SL0029	Antimony	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Arsenic	BDL	UJ	MS/MSD out of control limit criteria
	Barium	22 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Beryllium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Cadmium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Chromium	3.0 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Copper	5.7 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Lead	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Nickel	5.9 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Selenium	BDL	UJ	MS/MSD out of control limit criteria
	Silver	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Zinc	16 mg/Kg	J	MS/MSD and PDS out of control limit criteria

0673

11/11/97

**Summary of Qualified Analytical Results  
for Waste Soil  
ASI Data Package 86235  
Sloss Industries, Birmingham, AL**

G & M Sample I.D.	Analyte	Concentration Detected	Qualifier	Reasons for Qualification
970822-LD-1W-SL0031A	Antimony	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Arsenic	2.9 mg/Kg	J	MS/MSD out of control limit criteria
	Barium	92 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Beryllium	1.2 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Cadmium	17 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Chromium	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Copper	97 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Lead	99 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Nickel	19 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Selenium	BDL	UJ	MS/MSD out of control limit criteria
	Silver	2.4 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Zinc	1000 mg/Kg	J	MS/MSD and PDS out of control limit criteria
970822-LD-1W-SL0032	Antimony	7.0 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Arsenic	6.3 mg/Kg	J	MS/MSD out of control limit criteria
	Barium	290 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Beryllium	1.0 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Cadmium	34 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Chromium	220 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Copper	270 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Lead	360 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Nickel	110 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Selenium	BDL	UJ	MS/MSD out of control limit criteria
	Silver	3.0 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Zinc	1800 mg/Kg	J	MS/MSD and PDS out of control limit criteria

**Summary of Qualitative Analytical Results  
for Waste Soil  
ASI Data Package 86235  
Sloss Industries, Birmingham, AL**

Page 3 of 4

G & M Sample I.D.	Analyte	Concentration Detected	Qualifier	Reasons for Qualification
970822-LD-1W-SL0033A	Antimony	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Arsenic	3.8 mg/Kg	J	MS/MSD out of control limit criteria
	Barium	140 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Beryllium	1.7 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Cadmium	23 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Chromium	22 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Copper	86 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Lead	120 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Nickel	18 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Selenium	BDL	UJ	MS/MSD out of control limit criteria
	Silver	1.4 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Zinc	1300 mg/Kg	J	MS/MSD and PDS out of control limit criteria
970822-LD-1W-SL0035A	Antimony	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Arsenic	1.8 mg/Kg	J	MS/MSD out of control limit criteria
	Barium	120 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Beryllium	0.9 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Cadmium	3.8 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Chromium	5.5 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Copper	19 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Lead	36 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Nickel	5.6 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Selenium	BDL	UJ	MS/MSD out of control limit criteria
	Silver	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Zinc	88 mg/Kg	J	MS/MSD and PDS out of control limit criteria

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**Summary of Qualified Analytical Results  
for Waste Soil  
ASI Data Package 86235  
Sloss Industries, Birmingham, AL**

G & M Sample I.D.	Analyte	Concentration Detected	Qualifier	Reasons for Qualification
970822-LD-1W-SL0037	Antimony	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Arsenic	BDL	UJ	MS/MSD out of control limit criteria
	Barium	19 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Beryllium	0.8 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Cadmium	1.6 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Chromium	1.6 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Copper	13 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Lead	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Nickel	4.6 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Selenium	BDL	UJ	MS/MSD out of control limit criteria
	Silver	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Zinc	35 mg/Kg	J	MS/MSD and PDS out of control limit criteria
970822-LD-1W-SL9999A	Antimony	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Arsenic	4.2 mg/Kg	J	MS/MSD out of control limit criteria
	Barium	110 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Beryllium	0.9 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Cadmium	11 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Chromium	32 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Copper	120 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Lead	99 mg/Kg	UJ	MS/MSD and PDS out of control limit criteria
	Nickel	16 mg/Kg	J	MS/MSD and PDS out of control limit criteria
	Selenium	BDL	UJ	MS/MSD out of control limit criteria
	Silver	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Zinc	580 mg/Kg	J	MS/MSD and PDS out of control limit criteria

**Notes:**

U - Non-detect

UJ - Non-detected estimated

J - Estimated

R - Rejected



# ANALYTICAL SERVICES, INC.

ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

29 September, 1997

## Case Narrative Report 86235

The samples were collected on 22 August, 1997 and received by ASI 25 August, 1997. Conditions of sample receipt were documented on the Chain of Custody. The samples were logged into the LIMS as report 86235 for the following analyses as per client request: BNA (EPA 8270), VOA (EPA 8260), Metals (EPA 6010, 7060, 7841, 7740, 7471), CN (EPA 9010) and Moisture (ASTM D 2216). All holding times for sample preparation and analysis were met with exception of Moisture on 86235-3, 86235-6, 86235-8 and 86235-12.

BNA analysis (EPA 8270) gave acceptable spike and surrogate recoveries with the single exception of high Terphenyl-d14 on 86235-11 due to matrix effect.


VOA analysis (EPA 8260) for solid samples met all data quality objectives.

VOA analysis (EPA 8260) for the aqueous trip blank met all data quality objectives.

Metals analysis (EPA 6010) gave low MS/MSD/PDS for Be, Cd, Cr, Cu, Ni, Pb, Sb and Zn, low MS/MSD for Ag and low MSD for Ba. All other quality controls were acceptable. As analysis (EPA 7060) gave low MS/MSD. Tl analysis (EPA 7841) met all data quality objectives. Se analysis (EPA 7740) gave low MS/MSD. Hg analysis (EPA 7471) was split into two batches. Batch #32365 met all data quality objectives. Batch #32369 gave high MSD.

CN analysis (EPA 9010) met all data quality objectives.

Moisture analysis (ASTM D 2216) was split into two batches. Both batches met all data quality objectives.

  
for  
Roy-Keith Smith, PhD  
Quality Assurance Manager

0677



# ANALYTICAL SERVICES, INC.

ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

11/6/97

## Master List ASI #86235

Sample #	G&M ID	Analysis	Notes
S86235_1	970822-LD-1W-SL0021	9010, Metals, 8260, 8270	
S86235_2	970822-LD-1W-SL0035A	9010, Metals, 8270	
S86235_3	970822-LD-1W-SL0035A/B	8260	Composite before analysis
S86235_4	970822-LD-1W-SL0037	9010, Metals, 8260, 8270	
S86235_5	970822-LD-1W-SL0033A	9010, Metals, 8270	
S86235_6	970822-LD-1W-SL0033A/B/C	8260	Composite before analysis
S86235_7	970822-LD-1W-SL0031A	9010, Metals, 8270	
S86235_8	970822-LD-1W-SL0031A/B/C	8260	Composite before analysis
S86235_9	970822-LD-1W-SL0032	9010, Metals, 8260, 8270	
S86235_10	970822-LD-1W-SL0029	9010, Metals, 8260, 8270	
S86235_11	970822-LD-1W-SL9999A	9010, Metals, 8270	
S86235_12	970822-LD-1W-SL9999A/B	8260	Composite before analysis
S86235_13	970822-LD-1W-TB0001	8260	

0678



Project Name: Sloss Industries

Project Number: TF0320.015

#2/18/97  
KT

TEST	S86235_1	S86235_2	S86235_3	S86235_4	S86235_5
Sample ID :	970822-LD-1W-SL0021	970822-LD-1W-SL0035A	970822-LD-1W-SL0035A/B	970822-LD-1W-SL0037	970822-LD-1W-SL0033A
Moisture (%)	12.6	7.3	10.7	20.4	23.9
<b>Cyanide</b>					
Total Cyanide (CN)		1.9		0.3	4.0
<b>Metals</b>					
Total Antimony (Sb)(EPA 6010A)					
Total Arsenic (As)(EPA 7060A)		1.8			3.8
Total Barium (Ba)(EPA 6010A)	45	120		19	140
Total Beryllium (Be)(EPA 6010A)		0.9		0.8	1.7
Total Cadmium (Cd)(EPA 6010A)	1.7	3.8		1.6	23
Total Chromium (Cr)(EPA 6010A)	7.9	5.5		1.6	22
Total Copper (Cu)(EPA 6010A)	13	19		13	86
Total Lead (Pb)(EPA 6010A)		36			120
Total Mercury (Hg)(EPA 7471)					
Total Nickel (Ni)(EPA 6010A)	15	5.6		4.6	18
Total Silver (Ag)(EPA 6010A)					1.4
Total Zinc (Zn)(EPA 6010A)	35	88		35	1300
<b>Volatile Organics (EPA 8260A)</b>					
Toluene					
<b>Xylenes</b>					
<b>Acid Extractable Organics (EPA 8270B)</b>					
<b>Base Neutral Extractable Organics (EPA 8270B)</b>					
Anthracene		710			
Benzo(a)anthracene		1900			
Benzo(b)fluoranthene		1000			
Benzo(k)fluoranthene		1400			
Benzo(ghi)perylene		1100			
Benzo(a)pyrene		1400			
Bis(2-ethylhexyl)phthalate	1400	400			
Chrysene		1800			
Fluoranthene		2300			
Fluorene		620			
Indeno(1,2,3-cd)pyrene		950			
Naphthalene		700			
Phenanthrene		2000			
Pyrene		2700			

Project Name: Sloss Industries

Project Number: TF0320.015

TEST	S86235_6	S86235_7	S86235_8	S86235_9	S86235_10
Sample ID :	970822-LD-1W-SL0033A/B/C	970822-LD-1W-SL0031A	970822-LD-1W-SL0031A/B/C	970822-LD-1W-SL0032	970822-LD-1W-SL0029
Moisture (%)	18.9	24	16.4	13.1	23.5
<b>Cyanide</b>					
Total Cyanide (CN)		2.3		2.8	
<b>Metals</b>					
Total Antimony (Sb)(EPA 6010A)				7.0	
Total Arsenic (As)(EPA 7060A)		2.9		6.3	
Total Barium (Ba)(EPA 6010A)		92		290	22
Total Beryllium (Be)(EPA 6010A)		1.2		1.0	
Total Cadmium (Cd)(EPA 6010A)		17		34	
Total Chromium (Cr)(EPA 6010A)				220	3.0
Total Copper (Cu)(EPA 6010A)		97		270	5.7
Total Lead (Pb)(EPA 6010A)		99		360	
Total Mercury (Hg)(EPA 7471)				0.40	
Total Nickel (Ni)(EPA 6010A)		19		110	5.9
Total Silver (Ag)(EPA 6010A)		2.4		3.0	
Total Zinc (Zn)(EPA 6010A)		1000		1800	16
<b>Volatile Organics (EPA 8260A)</b>					
Toluene				7	
<b>Xylenes</b>					
<b>Acid Extractable Organics (EPA 8270B)</b>					
<b>Base Neutral Extractable Organics (EPA 8270B)</b>					
<b>Anthracene</b>					
Benzo(a)anthracene				500	
Benzo(b)fluoranthene					
Benzo(k)fluoranthene				500	
Benzo(ghi)perylene				410	
Benzo(a)pyrene				420	
Bis(2-ethylhexyl)phthalate				2000	
Chrysene				550	
Fluoranthene				830	
Fluorene					
Indeno(1,2,3-cd)pyrene					
Naphthalene					
Phenanthrene				760	
Pyrene				1100	

Project Name: Sloss Industries

Project Number: TF0320.015

TEST	S86235_11	S86235_12	S86235_13
Sample ID :	970822-LD-1W-SL9999A	970822-LD-1W-SL9999A/B	970822-LD-1W-TB0001
Moisture (%)	2.6	4.6	
<b>Cyanide</b>			
Total Cyanide (CN)	3.5		
<b>Metals</b>			
Total Antimony (Sb)(EPA 6010A)			
Total Arsenic (As)(EPA 7060A)	4.2		
Total Barium (Ba)(EPA 6010A)	110		
Total Beryllium (Be)(EPA 6010A)	0.9		
Total Cadmium (Cd)(EPA 6010A)	11		
Total Chromium (Cr)(EPA 6010A)	32		
Total Copper (Cu)(EPA 6010A)	120		
Total Lead (Pb)(EPA 6010A)	99		
Total Mercury (Hg)(EPA 7471)			
Total Nickel (Ni)(EPA 6010A)	16		
Total Silver (Ag)(EPA 6010A)			
Total Zinc (Zn)(EPA 6010A)	580		
<b>Volatile Organics (EPA 8260A)</b>			
Toluene		28	
Xylenes		7	
<b>Acid Extractable Organics (EPA 8270B)</b>			(ug/l)
<b>Base Neutral Extractable Organics (EPA 8270B)</b>			
Anthracene			
Benzo(a)anthracene	380		
Benzo(b)fluoranthene			
Benzo(k)fluoranthene	400		
Benzo(ghi)perylene			
Benzo(a)pyrene			
Bis(2-ethylhexyl)phthalate	3200		
Chrysene	460		
Fluoranthene	720		
Fluorene			
Indeno(1,2,3-cd)pyrene			
Naphthalene			
Phenanthrene	450		
Pyrene	840		



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86235-1

September 30, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970822-LD-1W-SL0021, 08/22/97, 10:55, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	12.6	0.01	%	1	
57125	Total Cyanide	BDL	0.2	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	5.7	mg/kg	1	EPA 6010A
7440382	Total Arsenic	BDL	1.0	mg/kg	1	EPA 7060A
7440393	Total Barium	45	1.1	mg/kg	1	EPA 6010
7440417	Total Beryllium	BDL	0.6	mg/kg	1	EPA 6010A
7440439	Total Cadmium	1.7	0.6	mg/kg	1	EPA 6010A
7440473	Total Chromium	7.9	1.1	mg/kg	1	EPA 6010A
7440508	Total Copper	13	2.3	mg/kg	1	EPA 6010A
7439921	Total Lead	BDL	2.9	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.25	mg/kg	1	EPA 7471
7440020	Total Nickel	15	2.3	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.0	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.1	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.0	mg/kg	1	EPA 7841
7440666	Total Zinc	35	2.3	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	57	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	57	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	57	ug/kg	1	EPA 8260A
71432	Benzene	BDL	6	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	11	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	11	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	11	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

0682

Page 1 of 4

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL0021, 08/22/97, 10:55, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	11	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	57	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	57	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
110071	4-Methyl-2-pentanone	BDL	57	ug/kg	1	EPA 8260A
100025	Styrene	BDL	6	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	11	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	11	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	380	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	380	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	380	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	380	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	380	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2000	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2000	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	380	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	380	ug/kg	1	EPA 8270B
100045	4-Methylphenol	BDL	380	ug/kg	1	EPA 8270B
100027	2-Nitrophenol	BDL	380	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2000	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	380	ug/kg	1	EPA 8270B
108952	Phenol	BDL	380	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

0683

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL0021, 08/22/97, 10:55, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	380	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	380	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2000	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	380	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	380	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	380	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	380	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	380	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	380	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	380	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	380	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	380	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	380	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	380	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	380	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	1400	380	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	380	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	380	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	380	ug/kg	1	EPA 827C
7005723	4-Chlorophenyl phenyl ether	BDL	380	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	380	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	380	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	380	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	380	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	380	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	380	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	380	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2000	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	380	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	380	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	380	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	380	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	380	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	380	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	380	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	380	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	380	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	380	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	380	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	380	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	380	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	380	ug/kg	1	EPA 827C
91203	Naphthalene	BDL	380	ug/kg	1	EPA 8270L
88744	2-Nitroaniline	BDL	380	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	380	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

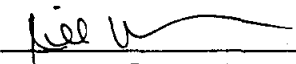
## Sample Description

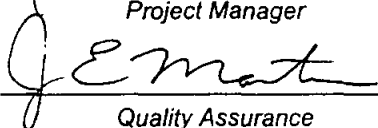
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL0021, 08/22/97, 10:55, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	380	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	380	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	380	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	380	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	380	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	380	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	380	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	380	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86235-2

September 30, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970822-LD-1W-SL0035A, 08/22/97, 11:15, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	7.3	0.10	%	1	
57125	Total Cyanide	1.9	0.2	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	5.4	mg/kg	1	EPA 6010A
7440382	Total Arsenic	1.8	1.0	mg/kg	1	EPA 7060A
7440393	Total Barium	120	1.1	mg/kg	1	EPA 6010
7440417	Total Beryllium	0.9	0.6	mg/kg	1	EPA 6010A
7440439	Total Cadmium	3.8	0.6	mg/kg	1	EPA 6010A
7440473	Total Chromium	5.5	1.1	mg/kg	1	EPA 6010A
7440508	Total Copper	19	2.2	mg/kg	1	EPA 6010A
7439921	Total Lead	36	2.7	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.25	mg/kg	1	EPA 7471
7440020	Total Nickel	5.6	2.2	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.0	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.1	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.0	mg/kg	1	EPA 7841
7440666	Total Zinc	88	2.2	mg/kg	1	EPA 6010A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	350	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	350	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	350	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	350	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	350	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	1800	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	1800	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	350	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	350	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	350	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	350	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	1800	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	350	ug/kg	1	EPA 8270B
108952	Phenol	BDL	350	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0686



## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL0035A, 08/22/97, 11:15, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	350	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	350	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	1800	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	350	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	350	ug/kg	1	EPA 8270B
120127	Anthracene	710	350	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	1900	350	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	1000	350	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	1400	350	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	1100	350	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	1400	350	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	350	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	350	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	350	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	350	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	400	350	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	350	ug/kg	1	EPA 8270B
100178	p-Chloroaniline	BDL	350	ug/kg	1	EPA 8270B
91000	2-Chloronaphthalene	BDL	350	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	350	ug/kg	1	EPA 8270B
218019	Chrysene	1800	350	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	350	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	350	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	350	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	350	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	350	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	350	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	1800	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	350	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	350	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	350	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	350	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	350	ug/kg	1	EPA 8270B
206440	Fluoranthene	2300	350	ug/kg	1	EPA 8270B
86737	Fluorene	620	350	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	350	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	350	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	350	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	350	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	950	350	ug/kg	1	EPA 8270B
78501	Isophorone	BDL	350	ug/kg	1	EPA 8270B
91000	2-Methylnaphthalene	BDL	350	ug/kg	1	EPA 8270B
91203	Naphthalene	700	350	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	350	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	350	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0687

Page 2 of 10

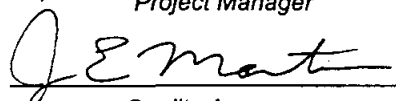
## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL0035A, 08/22/97, 11:15, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	350	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	350	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	350	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	350	ug/kg	1	EPA 8270B
85018	Phenanthrene	2000	350	ug/kg	1	EPA 8270B
129000	Pyrene	2700	350	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	350	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	350	ug/kg	1	EPA 8270B

Respectfully submitted,

  
\_\_\_\_\_  
Project Manager  
\_\_\_\_\_  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86235-3

September 30, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970822-LD-1W-SL0035A/B, 08/22/97, 11:15, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	10.7	0.056	%	1	
	Volatile Organics (EPA 8260A)					
67641	Acetone	BDL	56	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	56	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	56	ug/kg	1	EPA 8260A
71-43-2	Benzene	BDL	6	ug/kg	1	EPA 8260A
75-27-4	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	11	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	11	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	11	ug/kg	1	EPA 8260A
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	11	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100-114	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
911-2	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	56	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	56	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

0680

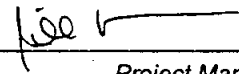
## Sample Description

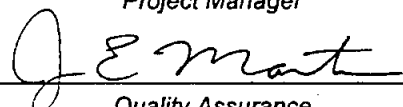
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL0035AIB, 08/22/97, 11:15, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	56	ug/kg	1	EPA 8260A
100425	Styrene	BDL	6	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	11	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	11	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A

Respectfully submitted,

  
\_\_\_\_\_  
Project Manager

  
\_\_\_\_\_  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86235-4

September 30, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970822-LD-1W-SL0037, 08/22/97, 14:45, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Moisture	20.4	0.08	%	1	
	Total Cyanide	0.3	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.3	mg/kg	1	EPA 6010A
7440382	Total Arsenic	BDL	1.0	mg/kg	1	EPA 7060A
7440393	Total Barium	19	1.3	mg/kg	1	EPA 6010A
7440417	Total Beryllium	0.8	0.6	mg/kg	1	EPA 6010A
7440439	Total Cadmium	1.6	0.6	mg/kg	1	EPA 6010A
7440473	Total Chromium	1.6	1.3	mg/kg	1	EPA 6010A
7440508	Total Copper	13	2.5	mg/kg	1	EPA 6010A
7439921	Total Lead	BDL	3.1	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.25	mg/kg	1	EPA 7471
7440020	Total Nickel	4.6	2.5	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.0	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.3	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.0	mg/kg	1	EPA 7841
7440666	Total Zinc	35	2.5	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	63	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	63	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	63	ug/kg	1	EPA 8260A
71432	Benzene	BDL	6	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	13	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
75133	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	13	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	13	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0691

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL0037, 08/22/97, 14:45, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	13	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	63	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	63	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	63	ug/kg	1	EPA 8260A
100425	Styrene	BDL	6	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	13	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	13	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	410	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	410	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	410	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	410	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	410	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2100	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2100	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	410	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	410	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	410	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	410	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2100	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	410	ug/kg	1	EPA 8270B
108952	Phenol	BDL	410	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0692

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL0037, 08/22/97, 14:45, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	410	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	410	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2100	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	410	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	410	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	410	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	410	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	410	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	410	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	410	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	410	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	410	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	410	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	410	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	410	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	410	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	410	ug/kg	1	EPA 8270B
1178	p-Chloroaniline	BDL	410	ug/kg	1	EPA 8270B
117	2-Chloronaphthalene	BDL	410	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	410	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	410	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	410	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	410	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	410	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	410	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	410	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	410	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2100	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	410	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	410	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	410	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	410	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	410	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	410	ug/kg	1	EPA 8270B
36737	Fluorene	BDL	410	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	410	ug/kg	1	EPA 8270B
37683	Hexachlorobutadiene	BDL	410	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	410	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	410	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	410	ug/kg	1	EPA 8270B
7791	Isophorone	BDL	410	ug/kg	1	EPA 8270B
116	2-Methylnaphthalene	BDL	410	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	410	ug/kg	1	EPA 8270B
38744	2-Nitroaniline	BDL	410	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	410	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

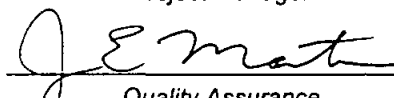
## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL0037, 08/22/97, 14:45, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	410	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	410	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	410	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	410	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	410	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	410	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	410	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	410	ug/kg	1	EPA 8270B

Respectfully submitted,

  
\_\_\_\_\_  
Project Manager  
\_\_\_\_\_  
Quality Assurance





# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86235-5

September 30, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970822-LD-1W-SL0033A, 08/22/97, 15:15, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	23.9	0.11	%	1	
57125	Total Cyanide	4.0	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.6	mg/kg	1	EPA 6010A
7440382	Total Arsenic	3.8	1.0	mg/kg	1	EPA 7060A
7440393	Total Barium	140	1.3	mg/kg	1	EPA 6010A
7440417	Total Beryllium	1.7	0.7	mg/kg	1	EPA 6010A
7440439	Total Cadmium	23	0.7	mg/kg	1	EPA 6010A
7440473	Total Chromium	22	1.3	mg/kg	1	EPA 6010A
7440508	Total Copper	86	2.6	mg/kg	1	EPA 6010A
7439921	Total Lead	120	3.3	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.25	mg/kg	1	EPA 7471
7440020	Total Nickel	18	2.6	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.0	mg/kg	1	EPA 7740
7440224	Total Silver	1.4	1.3	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.0	mg/kg	1	EPA 7841
7440666	Total Zinc	1300	2.6	mg/kg	1	EPA 6010A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	430	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	430	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	430	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	430	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	430	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2200	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2200	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	430	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	430	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	430	ug/kg	1	EPA 8270B
80055	2-Nitrophenol	BDL	430	ug/kg	1	EPA 8270B
10027	4-Nitrophenol	BDL	2200	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	430	ug/kg	1	EPA 8270B
108952	Phenol	BDL	430	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0695

**Sample Description**

Gloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL0033A, 08/22/97, 15:15, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	430	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	430	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2200	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	430	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	430	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	430	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	430	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	430	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	430	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	430	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	430	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	430	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	430	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	430	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	430	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	430	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	430	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	430	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	430	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	430	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	430	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	430	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	430	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	430	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	430	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	430	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	430	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2200	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	430	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	430	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	430	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	430	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	430	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	430	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	430	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	430	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	430	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	430	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	430	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	430	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	430	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	430	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	430	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	430	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	430	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

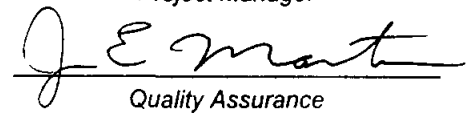
**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL0033A, 08/22/97, 15:15, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	430	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	430	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	430	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	430	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	430	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	430	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	430	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	430	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86235-6

September 30, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970822-LD-1W-SL0033A\B\C, 08/22/97, 15:15, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	18.9	0.04	%	1	
	Volatile Organics (EPA 8260A)					
67641	Acetone	BDL	62	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	62	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	62	ug/kg	1	EPA 8260A
71432	Benzene	BDL	6	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	12	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	12	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	12	ug/kg	1	EPA 8260A
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	12	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	62	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	62	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0698

Page 1 of 2

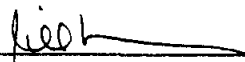

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL0033A\B\C, 08/22/97, 15:15, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	62	ug/kg	1	EPA 8260A
100425	Styrene	BDL	6	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	12	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	12	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A

Respectfully submitted,

  
Project Manager  
  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 86235-7

September 30, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970822-LD-1W-SL0031A, 08/22/97, 15:45, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Moisture	24	0.10	%	1	
	Total Cyanide	2.3	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.6	mg/kg	1	EPA 6010A
7440382	Total Arsenic	2.9	1.0	mg/kg	1	EPA 7060A
7440393	Total Barium	92	1.3	mg/kg	1	EPA 6010A
7440417	Total Beryllium	1.2	0.7	mg/kg	1	EPA 6010A
7440439	Total Cadmium	17	0.7	mg/kg	1	EPA 6010A
7440473	Total Chromium	BDL	1.3	mg/kg	1	EPA 6010A
7440508	Total Copper	97	2.6	mg/kg	1	EPA 6010A
7439921	Total Lead	99	3.3	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.25	mg/kg	1	EPA 7471
7440020	Total Nickel	19	2.6	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.0	mg/kg	1	EPA 7740
7440224	Total Silver	2.4	1.3	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.0	mg/kg	1	EPA 7841
7440666	Total Zinc	1000	2.6	mg/kg	1	EPA 6010A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	430	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	430	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	430	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	430	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	430	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2200	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2200	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	430	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	430	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	430	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	430	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2200	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	430	ug/kg	1	EPA 8270B
108952	Phenol	BDL	430	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

0700

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL0031A, 08/22/97, 15:45, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	430	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	430	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2200	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	430	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	430	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	430	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	430	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	430	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	430	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	430	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	430	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	430	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	430	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	430	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	430	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	430	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	430	ug/kg	1	EPA 8270B
100178	p-Chloroaniline	BDL	430	ug/kg	1	EPA 8270B
10017	2-Chloronaphthalene	BDL	430	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	430	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	430	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	430	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	430	ug/kg	1	EPA 8270B
34742	Di-n-butylphthalate	BDL	430	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	430	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	430	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	430	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2200	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	430	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	430	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	430	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	430	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	430	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	430	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	430	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	430	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	430	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	430	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	430	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	430	ug/kg	1	EPA 8270B
78091	Isophorone	BDL	430	ug/kg	1	EPA 8270B
10013	2-Methylnaphthalene	BDL	430	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	430	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	430	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	430	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

0701

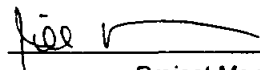
## Sample Description


Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL0031A, 08/22/97, 15:45, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	430	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	430	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	430	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	430	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	430	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	430	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	430	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	430	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



**ASI****ANALYTICAL SERVICES, INC.**

Environmental Monitoring &amp; Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

**Laboratory Report**

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: **86235-8**

September 30, 1997

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL0031A\B\C, 08/22/97, 15:45, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	16.4	0.059	%	1	
	<b>Volatile Organics (EPA 8260A)</b>					
67641	Acetone	BDL	59	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	59	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	59	ug/kg	1	EPA 8260A
71-42-2	Benzene	BDL	6	ug/kg	1	EPA 8260A
74-83-4	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	12	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	12	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	12	ug/kg	1	EPA 8260A
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	12	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100-41-4	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
79-06-2	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	59	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	59	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

0702

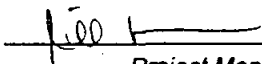
## Sample Description

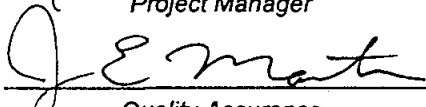
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL0031A\B\C, 08/22/97, 15:45, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	59	ug/kg	1	EPA 8260A
100425	Styrene	BDL	6	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	BDL	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	12	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	12	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86235-9

September 30, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970822-LD-1W-SL0032, 08/22/97, 16:25, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Moisture	13.1	0.09	%	1	
	Total Cyanide	2.8	0.2	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	7.0	5.8	mg/kg	1	EPA 6010A
7440382	Total Arsenic	6.3	1.0	mg/kg	1	EPA 7060A
7440393	Total Barium	290	1.2	mg/kg	1	EPA 6010A
7440417	Total Beryllium	1.0	0.6	mg/kg	1	EPA 6010A
7440439	Total Cadmium	34	0.6	mg/kg	1	EPA 6010A
7440473	Total Chromium	220	1.2	mg/kg	1	EPA 6010A
7440508	Total Copper	270	2.3	mg/kg	1	EPA 6010A
7439921	Total Lead	360	2.9	mg/kg	1	EPA 6010A
7439976	Total Mercury	0.40	0.25	mg/kg	1	EPA 7471
7440020	Total Nickel	110	2.3	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.0	mg/kg	1	EPA 7740
7440224	Total Silver	3.0	1.2	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.0	mg/kg	1	EPA 7841
7440666	Total Zinc	1800	2.3	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
57641	Acetone	BDL	58	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	58	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	58	ug/kg	1	EPA 8260A
71432	Benzene	BDL	6	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	6	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	6	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	12	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	6	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	6	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	6	ug/kg	1	EPA 8260A
108907	Chloroethane	BDL	6	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	6	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	12	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	12	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

0705

Page 1 of 1

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL0032, 08/22/97, 16:25, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	6	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	6	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	6	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	12	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	6	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	6	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	6	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	6	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	6	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	6	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	6	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	58	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	6	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	58	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	6	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	58	ug/kg	1	EPA 8260A
100425	Styrene	BDL	6	ug/kg	1	EPA 826C
79345	1,1,2,2-Tetrachloroethane	BDL	6	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	6	ug/kg	1	EPA 8260A
108883	Toluene	7	6	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	6	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	6	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	6	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	6	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	12	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	12	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	6	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	380	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	380	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	380	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	380	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	380	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2000	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2000	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	380	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	380	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	380	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	380	ug/kg	1	EPA 827C
100027	4-Nitrophenol	BDL	2000	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	380	ug/kg	1	EPA 8270B
108952	Phenol	BDL	380	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0706

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL0032, 08/22/97, 16:25, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	380	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	380	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2000	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	380	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	380	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	380	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	500	380	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	380	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	500	380	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	410	380	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	420	380	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	380	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	380	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	380	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	380	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	2000	380	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	380	ug/kg	1	EPA 8270B
100178	p-Chloroaniline	BDL	380	ug/kg	1	EPA 8270B
9101	2-Chloronaphthalene	BDL	380	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	380	ug/kg	1	EPA 8270B
218019	Chrysene	550	380	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	380	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	380	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	380	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	380	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	380	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	380	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2000	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	380	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	380	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	380	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	380	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	380	ug/kg	1	EPA 8270B
206440	Fluoranthene	830	380	ug/kg	1	EPA 8270B
36737	Fluorene	BDL	380	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	380	ug/kg	1	EPA 8270B
37683	Hexachlorobutadiene	BDL	380	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	380	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	380	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	380	ug/kg	1	EPA 8270B
78001	Isophorone	BDL	380	ug/kg	1	EPA 8270B
10013	2-Methylnaphthalene	BDL	380	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	380	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	380	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	380	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

0707

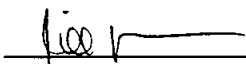
## Sample Description

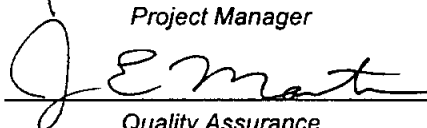
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL0032, 08/22/97, 16:25, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	380	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	380	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	380	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	380	ug/kg	1	EPA 8270B
85018	Phenanthrene	760	380	ug/kg	1	EPA 8270B
129000	Pyrene	1100	380	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	380	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	380	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86235-10

September 30, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970822-LD-1W-SL0029, 08/22/97, 16:40, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Moisture	23.5	0.06	%	1	
	Total Cyanide	BDL	0.3	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	6.5	mg/kg	1	EPA 6010A
7440382	Total Arsenic	BDL	1.0	mg/kg	1	EPA 7060A
7440393	Total Barium	22	1.3	mg/kg	1	EPA 6010A
7440417	Total Beryllium	BDL	0.7	mg/kg	1	EPA 6010A
7440439	Total Cadmium	BDL	0.7	mg/kg	1	EPA 6010A
7440473	Total Chromium	3.0	1.3	mg/kg	1	EPA 6010A
7440508	Total Copper	5.7	2.6	mg/kg	1	EPA 6010A
7439921	Total Lead	BDL	3.3	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.25	mg/kg	1	EPA 7471
7440020	Total Nickel	5.9	2.6	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.0	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.3	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.0	mg/kg	1	EPA 7841
7440666	Total Zinc	16	2.6	mg/kg	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	65	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	65	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	65	ug/kg	1	EPA 8260A
71432	Benzene	BDL	7	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	7	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	7	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	13	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	7	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	7	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	7	ug/kg	1	EPA 8260A
75133	Chloroethane	BDL	7	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	7	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	13	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	13	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0709

Page 1 of 1

**Sample Description**

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL0029, 08/22/97, 16:40, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
124481	Dibromochloromethane	BDL	7	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	7	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	7	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	13	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	7	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	7	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	7	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	7	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	7	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	7	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	7	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	65	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	7	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	65	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	7	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	65	ug/kg	1	EPA 8260A
100425	Styrene	BDL	7	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	7	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	7	ug/kg	1	EPA 8260A
108883	Toluene	BDL	7	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	7	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	7	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	7	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	7	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	13	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	13	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	7	ug/kg	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	430	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	430	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	430	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	430	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	430	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	2200	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	2200	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	430	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	430	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	430	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	430	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	2200	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	430	ug/kg	1	EPA 8270B
108952	Phenol	BDL	430	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0710



## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL0029, 08/22/97, 16:40, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	430	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	430	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	2200	ug/kg	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	430	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	430	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	430	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	430	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	430	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	430	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	430	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	430	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	430	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	430	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	430	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	430	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	430	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	430	ug/kg	1	EPA 8270B
10078	p-Chloroaniline	BDL	430	ug/kg	1	EPA 8270B
9537	2-Chloronaphthalene	BDL	430	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	430	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	430	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	430	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	430	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	430	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	430	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	430	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	430	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	2200	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	430	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	430	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	430	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	430	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	430	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	430	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	430	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	430	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	430	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	430	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	430	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	430	ug/kg	1	EPA 8270B
10091	Isophorone	BDL	430	ug/kg	1	EPA 8270B
10076	2-Methylnaphthalene	BDL	430	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	430	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	430	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	430	ug/kg	1	EPA 8270B

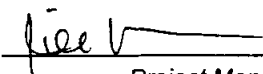
**Sample Description**

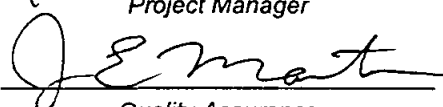
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL0029, 08/22/97, 16:40, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	430	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	430	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	430	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	430	ug/kg	1	EPA 8270B
85018	Phenanthrene	BDL	430	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	430	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	430	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	430	ug/kg	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 86235-11

September 30, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970822-LD-1W-SL9999A, 08/22/97, 17:05, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	2.6	0.11	%	1	
57125	Total Cyanide	3.5	0.2	mg/kg	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	5.1	mg/kg	1	EPA 6010A
7440382	Total Arsenic	4.2	1.0	mg/kg	1	EPA 7060A
7440393	Total Barium	110	1.0	mg/kg	1	EPA 6010A
7440417	Total Beryllium	0.9	0.5	mg/kg	1	EPA 6010A
7440439	Total Cadmium	11	0.5	mg/kg	1	EPA 6010A
7440473	Total Chromium	32	1.0	mg/kg	1	EPA 6010A
7440508	Total Copper	120	2.1	mg/kg	1	EPA 6010A
7439921	Total Lead	99	2.6	mg/kg	1	EPA 6010A
7439976	Total Mercury	BDL	0.25	mg/kg	1	EPA 7471
7440020	Total Nickel	16	2.1	mg/kg	1	EPA 6010A
7782492	Total Selenium	BDL	4.0	mg/kg	1	EPA 7740
7440224	Total Silver	BDL	1.0	mg/kg	1	EPA 6010A
7440280	Total Thallium	BDL	4.0	mg/kg	1	EPA 7841
7440666	Total Zinc	580	2.1	mg/kg	1	EPA 6010A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	330	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	330	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	330	ug/kg	1	EPA 8270B
37650	2,6-Dichlorophenol	BDL	330	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	330	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	1700	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	1700	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
5	2-Nitrophenol	BDL	330	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	1700	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	330	ug/kg	1	EPA 8270B
108952	Phenol	BDL	330	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

0713

## Sample Description

Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL9999A, 08/22/97, 17:05, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
95954	2,4,5-Trichlorophenol	BDL	330	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	330	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	1700	ug/kg	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	330	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	330	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	330	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	380	330	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	330	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	400	330	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	330	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	330	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	330	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	330	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	330	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	330	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	3200	330	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	330	ug/kg	1	EPA 8270B
106478	p-Chloroaniline	BDL	330	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	330	ug/kg	1	EPA 8270E
7005723	4-Chlorophenyl phenyl ether	BDL	330	ug/kg	1	EPA 8270B
218019	Chrysene	460	330	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	330	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	330	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	330	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	1700	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	330	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	330	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	330	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	330	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	330	ug/kg	1	EPA 8270B
206440	Fluoranthene	720	330	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	330	ug/kg	1	EPA 8270B
118741	Hexachlorobenzene	BDL	330	ug/kg	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	330	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	330	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	330	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	330	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	330	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	330	ug/kg	1	EPA 8270E
91203	Naphthalene	BDL	330	ug/kg	1	EPA 8270B
88744	2-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B

BDL - Below Detection Limit

Results reported on a dry weight basis

0714

Page 2 of 3

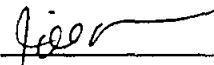
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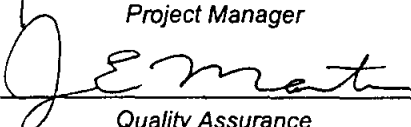
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL9999A, 08/22/97, 17:05, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
100016	4-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	330	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	330	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	330	ug/kg	1	EPA 8270B
85018	Phenanthrene	450	330	ug/kg	1	EPA 8270B
129000	Pyrene	840	330	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	330	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	330	ug/kg	1	EPA 8270B

Respectfully submitted,

  
\_\_\_\_\_  
Project Manager

  
\_\_\_\_\_  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86235-12

September 30, 1997

### Sample Description

Sloss Industries

Soil, G & M Project #TF0320.015, 970822-LD-1W-SL9999A\B, 08/22/97, 17:05, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
	Moisture	4.6	0.05	%	1	
	Volatile Organics (EPA 8260A)					
67641	Acetone	BDL	52	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	52	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	52	ug/kg	1	EPA 8260A
71432	Benzene	BDL	5	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	5	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	5	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/kg	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	52	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	52	ug/kg	1	EPA 8260A

BDL - Below Detection Limit

Results reported on a dry weight basis

0716

Page 1 of 2

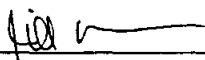
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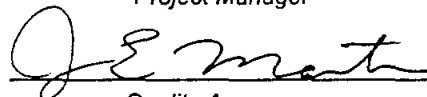
Sloss Industries

Soil, G &amp; M Project #TF0320.015, 970822-LD-1W-SL9999A\B, 08/22/97, 17:05, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
75092	Methylene chloride	BDL	5	ug/kg	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	52	ug/kg	1	EPA 8260A
100425	Styrene	BDL	5	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/kg	1	EPA 8260A
108883	Toluene	28	5	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	5	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	5	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	11	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	11	ug/kg	1	EPA 8260A
1330207	Xylenes	7	5	ug/kg	1	EPA 8260A

Respectfully submitted,

  
\_\_\_\_\_  
Project Manager

  
\_\_\_\_\_  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86235-13

September 30, 1997

### Sample Description

Sloss Industries

Water, G & M Project #TF0320.015, 970822-LD-1W-TB0001, 08/22/97, 17:15, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit



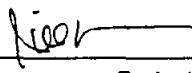
## Sample Description

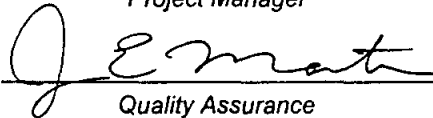
Sloss Industries

Water, G &amp; M Project #TF0320.015, 970822-LD-1W-TB0001, 08/22/97, 17:15, received 08/25/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86235-14

September 30, 1997

### Sample Description

Sloss Industries  
Soil/Sediment,, Batch #32102,,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/kg	1	EPA 8260A
107028	Acrolein	BDL	50	ug/kg	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/kg	1	EPA 8260A
71432	Benzene	BDL	5	ug/kg	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/kg	1	EPA 8260A
75252	Bromoform	BDL	5	ug/kg	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/kg	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/kg	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/kg	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/kg	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/kg	1	EPA 8260A
67663	Chloroform	BDL	5	ug/kg	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/kg	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/kg	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/kg	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/kg	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/kg	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/kg	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/kg	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/kg	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/kg	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/kg	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/kg	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/kg	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/kg	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/kg	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/kg	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/kg	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/kg	1	EPA 8260A

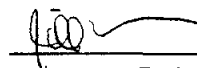
BDL - Below Detection Limit

0720

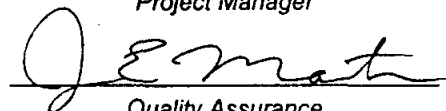
**Sample Description**  
Sloss Industries  
Soil/Sediment,, Batch #32102,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/kg	1	EPA 8260A
100425	Styrene	BDL	5	ug/kg	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/kg	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/kg	1	EPA 8260A
108883	Toluene	BDL	5	ug/kg	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	5	ug/kg	1	EPA 8260A
79016	Trichloroethene	BDL	5	ug/kg	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	5	ug/kg	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/kg	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/kg	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/kg	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/kg	1	EPA 8260A

Respectfully submitted,



Project Manager



Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86235-15

September 30, 1997

### Sample Description

Sloss Industries  
Soil/Sediment,, Batch #32124,...

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	330	ug/kg	1	EPA 8270B
95578	2-Chlorophenol	BDL	330	ug/kg	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	330	ug/kg	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	330	ug/kg	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	330	ug/kg	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	1700	ug/kg	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	1700	ug/kg	1	EPA 8270B
95487	2-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
108394	3-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
106445	4-Methylphenol	BDL	330	ug/kg	1	EPA 8270B
88755	2-Nitrophenol	BDL	330	ug/kg	1	EPA 8270B
100027	4-Nitrophenol	BDL	1700	ug/kg	1	EPA 8270B
87865	Pentachlorophenol	BDL	330	ug/kg	1	EPA 8270B
108952	Phenol	BDL	330	ug/kg	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	330	ug/kg	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	330	ug/kg	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	1700	ug/kg	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	330	ug/kg	1	EPA 8270B
208968	Acenaphthylene	BDL	330	ug/kg	1	EPA 8270B
120127	Anthracene	BDL	330	ug/kg	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	330	ug/kg	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	330	ug/kg	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	330	ug/kg	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	330	ug/kg	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	330	ug/kg	1	EPA 8270B
100516	Benzyl Alcohol	BDL	330	ug/kg	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	330	ug/kg	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	330	ug/kg	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	330	ug/kg	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	330	ug/kg	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	330	ug/kg	1	EPA 8270B

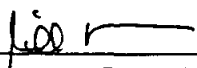
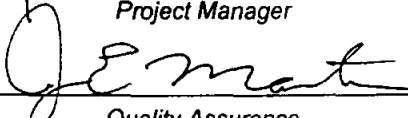
BDL - Below Detection Limit

0722

**Sample Description**  
 Sloss Industries  
 Soil/Sediment,, Batch #32124,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106478	p-Chloroaniline	BDL	330	ug/kg	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	330	ug/kg	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	330	ug/kg	1	EPA 8270B
218019	Chrysene	BDL	330	ug/kg	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	330	ug/kg	1	EPA 8270B
132649	Dibenzofuran	BDL	330	ug/kg	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	330	ug/kg	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	330	ug/kg	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	1700	ug/kg	1	EPA 8270B
84662	Diethylphthalate	BDL	330	ug/kg	1	EPA 8270B
131113	Dimethylphthalate	BDL	330	ug/kg	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	330	ug/kg	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	330	ug/kg	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	330	ug/kg	1	EPA 8270B
206440	Fluoranthene	BDL	330	ug/kg	1	EPA 8270B
86737	Fluorene	BDL	330	ug/kg	1	EPA 8270B
11741	Hexachlorobenzene	BDL	330	ug/kg	1	EPA 8270B
11743	Hexachlorobutadiene	BDL	330	ug/kg	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	330	ug/kg	1	EPA 8270B
67721	Hexachloroethane	BDL	330	ug/kg	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	330	ug/kg	1	EPA 8270B
78591	Isophorone	BDL	330	ug/kg	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	330	ug/kg	1	EPA 8270B
91203	Naphthalene	BDL	330	ug/kg	1	EPA 8270B
38744	2-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B
99092	3-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B
100016	4-Nitroaniline	BDL	330	ug/kg	1	EPA 8270B
98953	Nitrobenzene	BDL	330	ug/kg	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	330	ug/kg	1	EPA 8270B
621647	N-Nitroso-di-n-propylamine	BDL	330	ug/kg	1	EPA 8270B
35018	Phenanthrene	BDL	330	ug/kg	1	EPA 8270B
129000	Pyrene	BDL	330	ug/kg	1	EPA 8270B
110861	Pyridine	BDL	330	ug/kg	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	330	ug/kg	1	EPA 8270B

Respectfully submitted,

  
 Project Manager  
  
 Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86235-16

September 30, 1997

### Sample Description

Sloss Industries

Aqueous,, Batch #32492,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A

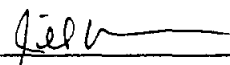
BDL - Below Detection Limit

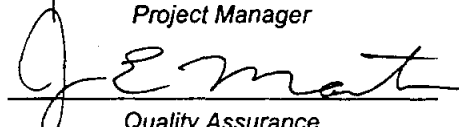
0724

**Sample Description**  
Sloss Industries  
Aqueous,, Batch #32492,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A

Respectfully submitted,

  
\_\_\_\_\_  
Project Manager

  
\_\_\_\_\_  
Quality Assurance

Analytical Services Inc. Batch QC  
For Report Number :86235  
Volatile Organics

Matrix : Soil/Sediment

Batch # 32102

Method : EPA 8260

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	110	113	2	61 - 145	0 - 14
Trichloroethene	102	106	3	71 - 120	0 - 14
Benzene	104	105	0	76 - 127	0 - 11
Toluene	109	109	1	76 - 125	0 - 13
Chlorobenzene	112	112	0	75 - 130	0 - 13

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	81	84	3	61 - 145	0 - 14
Trichloroethene	87	88	1	71 - 120	0 - 14
Benzene	99	100	1	76 - 127	0 - 11
Toluene	98	100	2	76 - 125	0 - 13
Chlorobenzene	98	101	2	75 - 130	0 - 13



Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Soil/Sediment Batch # 32102

Method : EPA 8260

% Recovery Objectives

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S1	1,2-Dichloroethane-d4	70 - 121
S2	Toluene-d8	81 - 117
S3	Ethylbenzene-d10	79 - 115
S4	4-Bromofluorobenzene	74 - 121

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Sample	File	S1	S2	S3	S4	S5	S6
32102BLK1A	>LB854	101	97	102	102		
^^Note: 85785-30							
85785-12	>LB874	99	105	103	104		
85785-12MS	>LB875	100	105	104	105		
^^Note: 85785-13							
85785-12MSD	>LB876	99	107	103	106		
^^Note: 85785-31							
32102BLK1B	>LB893	101	103	102	106		
32102LCS	>LB924	102	108	107	105		
32102LCSD	>LB904	102	105	108	105		
32102BLK1B	>SX012	92	95	92	97		
^^Note: 86235-14							
86235-1	>SX013	89	99	93	93		
86235-3	>SX014	90	102	94	91		
86235-4	>SX015	91	100	92	91		
86253-6	>SX016	95	99	93	90		
86235-8	>SX017	94	102	93	92		
86235-9	>SX018	99	110	99	84		
86235-10	>SX019	93	100	95	95		
86235-12	>SX020	95	117	98	82		

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Sample Batch Information  
Volatile Organics      Method : EPA 8260

Sample ID	Preparation		Preparation Notes	Analysis			Inst #
	Date	Time By		Date	Time	By	
32102BLK1A	/	/		08/18/97	0520	JKP	VOA1
85785-12	/	/		08/18/97	1905	JKP	VOA1
85785-12MS	/	/		08/18/97	1940	JKP	VOA1
85785-12MSD	/	/		08/18/97	2015	JKP	VOA1
32102BLK1B	/	/		08/31/97	2321	JKP	VOA1
32102LCS	/	/		08/20/97	0214	JKP	VOA1
32102LCSD	/	/		08/20/97	0249	JKP	VOA1
86235-1	/	/		09/01/97	0008	JKP	VOA1
86235-3	/	/		09/01/97	0043	JKP	VOA1
86235-4	/	/		09/01/97	0118	JKP	VOA1
86253-6	/	/		09/01/97	0153	JKP	VOA1
86235-8	/	/		09/01/97	0228	JKP	VOA1
86235-9	/	/		09/01/97	0303	JKP	VOA1
86235-10	/	/		09/01/97	0338	JKP	VOA1
86235-12	/	/		09/01/97	0412	JKP	VOA1

Analytical Services Inc. Batch QC  
 For Report Number :86235  
 Base Neutrals / Acids

Matrix : Soil/Sediment

Batch # 32124

Method : EPA 8270

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
Phenol	43	54	24	26 - 90	0 - 35
2-Chlorophenol	39	62	45	25 - 102	0 - 50
1,4-Dichlorobenzene	35	40	14	28 - 104	0 - 27
N-Nitrosodipropylamine	58	74	24	41 - 126	0 - 38
1,2,4-Trichlorobenzene	44	49	10	38 - 107	0 - 23
4-Chloro-3-methylphenol	59	74	22	26 - 103	0 - 33
Acenaphthene	84	92	9	31 - 137	0 - 19
2,4-Dinitrotoluene	76	86	12	28 - 89	0 - 47
4-Nitrophenol	70	82	16	11 - 114	0 - 50
Pentachlorophenol	72	80	10	17 - 109	0 - 47
Pyrene	71	81	13	35 - 142	0 - 36

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
Phenol	48	56	15	26 - 90	0 - 35
2-Chlorophenol	45	54	17	25 - 102	0 - 50
1,4-Dichlorobenzene	35	43	20	28 - 104	0 - 27
N-Nitrosodipropylamine	46	64	33	41 - 126	0 - 38
1,2,4-Trichlorobenzene	50	57	13	38 - 107	0 - 23
4-Chloro-3-methylphenol	56	66	16	26 - 103	0 - 33
Acenaphthene	78	90	14	31 - 137	0 - 19
2,4-Dinitrotoluene	62	80	25	28 - 89	0 - 47
4-Nitrophenol	57	77	30	11 - 114	0 - 50
Pentachlorophenol	60	81	30	17 - 109	0 - 47
Pyrene	64	84	27	35 - 142	0 - 36

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Base Neutrals / Acids

Matrix : Soil/Sediment      Batch # 32124      Method : EPA 8270

% Recovery Objectives

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S1	2-Fluorophenol	25 - 121
S2	Phenol-d5	24 - 113
S3	Nitrobenzene-d5	23 - 120
S4	2-Fluorobiphenyl	30 - 115
S5	2,4,6-Tribromophenol	19 - 122
S6	Terphenyl-d14	18 - 137

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Sample	File	S1	S2	S3	S4	S5	S6
<hr/>							
32124BLK	A6477	35	46	47	77	69	65
32124LCS	A6478	27	40	42	74	88	68
32124LCSD	A6479	46	36	63	88	100	79
86036-1	A6480	29	41	39	64	64	61
86036-2	A6481	45	59	57	79	82	68
86036-3	A6482	29	41	40	65	72	63
86036-3MS	A6483	34	41	43	67	76	61
86036-3MSD	A6484	41	26	52	79	91	80
86149-1	B0080			30	44		62
^^Note: PAH ONLY							
86149-3	B0081			43	57		80
^^Note: PAH ONLY							
86162-1	A6555	42	54	47	74	39	110
86162-2	A6556						
^^Note: NO USABLE DATA							
86162-3	A6557	57	71	89	39	40	86
86162-3DUP	A6558	47	58	71	34	34	83
86169	A6560	43	60	58	79	42	86
86223-1	A6570			67	81		136
^^Note: BN ONLY							
86223-2	A6571			64	80		113
^^Note: BN ONLY							
86223-3	A6572			81	99		108
^^Note: BN ONLY							
86162-2D	A6589	44	74	12	70	49	93
^^Note: 1:20 MATRIX EFFECT							
86235-1	A6629	42	57	49	73	56	94
86235-2	A6630	33	46	39	58	36	69

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## Analytical Services Inc. Batch QC

Surrogate Recovery

Base Neutrals / Acids

Matrix : Soil/Sediment Batch # 32124

Method : EPA 8270

## % Recovery Objectives

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S1	2-Fluorophenol	25 - 121
S2	Phenol-d5	24 - 113
S3	Nitrobenzene-d5	23 - 120
S4	2-Fluorobiphenyl	30 - 115
S5	2,4,6-Tribromophenol	19 - 122
S6	Terphenyl-d14	18 - 137

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Sample	File	S1	S2	S3	S4	S5	S6
<hr/>							
86235-4	A6631	63	80	73	98	63	103
86235-5	A6632	62	81	74	94	68	104
86235-7	A6633	45	63	55	78	32	94
86235-9	A6634	49	71	64	92	73	117
86235-11	A6635	62	91	87	111	84	146
^^Note: MATRIX EFFECT							
86235-10	A6650	51	71	61	80	54	99

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Sample Batch Information  
Base Neutrals / Acids Method : EPA 8270

Sample ID	Preparation			Preparation Notes	Analysis			Inst #
	Date	Time	By		Date	Time	By	
32124BLK	08/20/97	0900	ASF		08/20/97	1505	TAS	5970
32124LCS	08/20/97	0900	ASF		08/20/97	1537	TAS	5970
32124LCSD	08/20/97	0900	ASF		08/20/97	1609	TAS	5970
86036-1	08/20/97	0900	ASF		08/20/97	1641	TAS	5970
86036-2	08/20/97	0900	ASF		08/20/97	1713	TAS	5970
86036-3	08/20/97	0900	ASF		08/20/97	1745	TAS	5970
86036-3MS	08/20/97	0900	ASF		08/20/97	1817	TAS	5970
86036-3MSD	08/20/97	0900	ASF		08/20/97	1849	TAS	5970
86149-1	08/21/97	1500	ASF		08/22/97	0952	RFA	5971
86149-3	08/21/97	1500	ASF		08/22/97	1029	RFA	5971
86162-1	08/25/97	0900	ASF		08/25/97	1834	TAS	5970
86162-2	08/25/97	0900	ASF		08/25/97	1908	TAS	5970
86162-3	08/25/97	0900	ASF		08/25/97	1942	TAS	5970
86162-3DUP	08/25/97	0900	ASF		08/25/97	2016	TAS	5970
86169	08/25/97	0900	ASF		08/25/97	2124	TAS	5970
86235-2	08/26/97	0900	ASF		08/29/97	2303	TAS	5970
86235-4	08/26/97	0900	ASF		08/29/97	2336	TAS	5970
86235-5	08/26/97	0900	ASF		08/30/97	0010	TAS	5970
86235-7	08/26/97	0900	ASF		08/30/97	0043	TAS	5970
86235-9	08/26/97	0900	ASF		08/30/97	0116	TAS	5970
86235-1	08/26/97	0900	ASF		08/29/97	2229	TAS	5970
86235-10	08/26/97	0900	ASF		08/30/97	1448	TAS	5970
86235-11	08/26/97	0900	ASF		08/30/97	0150	TAS	5970
86223-1	08/26/97	0900	ASF		08/28/97	1341	TAS	5970
86223-2	08/26/97	0900	ASF		08/28/97	1415	TAS	5970
86223-3	08/26/97	0900	ASF		08/28/97	1449	TAS	5970
86162-2D	08/28/97	1200	TAS		08/29/97	0027	TAS	5970

Analytical Services Inc. Batch QC  
 For Report Number :86235  
 Volatile Organics

Matrix : Aqueous

Batch # 32492

Method : EPA 8260

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	113	110	3	61 - 145	0 - 14
Trichloroethene	103	104	1	71 - 120	0 - 14
Benzene	116	117	1	76 - 127	0 - 11
Toluene	106	108	2	76 - 125	0 - 13
Chlorobenzene	105	103	2	75 - 130	0 - 13

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	95	93	2	61 - 145	0 - 14
Trichloroethene	91	93	2	71 - 120	0 - 14
Benzene	99	101	1	76 - 127	0 - 11
Toluene	98	100	2	76 - 125	0 - 13
Chlorobenzene	99	102	3	75 - 130	0 - 13

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Aqueous

Batch # 32492

Method : EPA 8260

## % Recovery Objectives

S1	1,2-Dichloroethane-d4	76 - 114
S2	Toluene-d8	88 - 110
S3	Ethylbenzene-d10	75 - 115
S4	4-Bromofluorobenzene	86 - 115

Sample	File	S1	S2	S3	S4	S5	S6
32492BLK1A	>LI180	90	89	92	95		
^^Note: 86126-16							
86126-1	>LI187	90	88	89	91		
86126-2	>LI188	89	89	91	93		
86126-3	>LI189	92	91	93	91		
86126-4	>LI190	92	88	91	93		
86126-4MS	>LI194	89	88	91	91		
^^Note: 86126-5							
86126-4MSD	>LI195	93	91	92	94		
^^Note: 86126-5DUP							
86126-6	>LI196	90	92	94	93		
86126-7	>LI197	89	89	92	95		
86126-8	>LI197	91	89	90	94		
86126-9	>LI199	90	89	92	93		
86126-10	>LI200	89	90	94	94		
86126-11	>LI201	91	91	93	92		
86126-12	>LI202	95	89	90	95		
86126-13	>LI203	96	87	90	94		
86126-14	>LI204	95	89	93	93		
32492BLK2A	>RK466	101	101	106	98		
32492LCS	>RK475	110	99	101	98		
32492LCSD	>RK476	103	99	102	98		
32492BLK2B	>TM046	108	106	101	107		
86173-19RA	>TM052	112	102	99	105		
^^Note: RA AT LESSER DIL							
86173-15RA	>TM053	113	102	98	106		
^^Note: RA AT DIL							
86126-13RA	>TM056	112	102	101	105		
^^Note: RA FOR SURR							
32492BLK2C	>TM059	109	107	104	103		
^^Note: 86235-16							



Analytical Services Inc. Batch QC  
Surrogate Recovery  
Volatile Organics

Matrix : Aqueous

Batch # 32492

Method : EPA 8260

## % Recovery Objectives

S1	1,2-Dichloroethane-d4	76 - 114
S2	Toluene-d8	88 - 110
S3	Ethylbenzene-d10	75 - 115
S4	4-Bromofluorobenzene	86 - 115

Sample	File	S1	S2	S3	S4	S5	S6
86235-13	>TM062	114	105	102	109		

Sample Batch Information  
Volatile Organics Method : EPA 8260

Sample ID	Preparation			Preparation Notes	Analysis			Inst #
	Date	Time	By		Date	Time	By	
32492BLK1A	/	/			08/29/97	1245	JKP	VOA1
86126-1	/	/			08/29/97	1833	JKP	VOA1
86126-2	/	/			08/29/97	1908	JKP	VOA1
86126-3	/	/			08/29/97	1943	JKP	VOA1
86126-4	/	/			08/29/97	2018	JKP	VOA1
86126-4MS	/	/			08/29/97	2127	JKP	VOA1
86126-4MSD	/	/			08/29/97	2202	JKP	VOA1
86126-6	/	/			08/29/97	2237	JKP	VOA1
86126-7	/	/			08/29/97	2312	JKP	VOA1
86126-8	/	/			08/29/97	2347	JKP	VOA1
86126-9	/	/			08/30/97	0022	JKP	VOA1
86126-10	/	/			08/30/97	0056	JKP	VOA1
86126-11	/	/			08/30/97	0131	JKP	VOA1
86126-12	/	/			08/30/97	0206	JKP	VOA1
86126-13	/	/			08/30/97	0241	JKP	VOA1
86126-14	/	/			08/30/97	0317	JKP	VOA1
32492BLK2A	/	/			08/29/97	1113	JKP	VOA2
32492LCS	/	/			08/29/97	1840	JKP	VOA2
32492LCSD	/	/			08/29/97	1914	JKP	VOA2
32492BLK2B	/	/			09/01/97	1638	JKP	VOA2
86173-19RA	/	/			09/02/97	0101	JKP	VOA2
86173-15RA	/	/			09/02/97	0135	JKP	VOA2
86126-13RA	/	/			09/02/97	0316	JKP	VOA2
32492BLK2C	/	/			09/02/97	1027	JKP	VOA2
86235-13	/	/			09/02/97	1208	JKP	VOA2

Analytical Services Inc. Batch QC  
For Report Number :86235

QC Batch General Information					
Batch Number	Analyte	Analysis Method	Matrix	Blank Result	Prep. Method
32165	Ag	EPA 6010	Soil	<	0.0100
^^Note : BATCH PASSES ON LCS/LCSD/PDS DATA					
32165	Ba	EPA 6010	Soil	<	0.0100
^^Note : BATCH PASSES ON LCS/LCSD/MS/PDS DATA					
32165	Be	EPA 6010	Soil	<	0.0030
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
32165	Cd	EPA 6010	Soil	<	0.0050
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
32165	Cr	EPA 6010	Soil	<	0.0050
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
32165	Cu	EPA 6010	Soil	<	0.0100
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
32165	Ni	EPA 6010	Soil	<	0.0100
Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
32165	Pb	EPA 6010	Soil	<	0.0050
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
32165	Sb	EPA 6010	Soil	<	0.0100
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
32165	Zn	EPA 6010	Soil	<	0.0100
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
32178	Se	EPA 7740	Soil	<	0.0100
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
32178	Tl	EPA 7841	Soil	<	0.0100
32178	As	EPA 7060	Soil	<	0.0100
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
32365	Hg	EPA 7471	Soil	<	0.0002
32369	Hg	EPA 7471	Soil	<	0.0002
^^Note : BATCH PASSES ON LCS/LCSD/MS DUE TO LACK OF HOMOGENAITY					
32502	%Moist	ASTM D 2216	Soil		0.0000
32506	CN	EPA 9010	Aq/Solid	<	0.0200
32560	%Moist	ASTM D 2216	Soil		0.0000

Analytical Services Inc. Batch QC  
For Report Number :86235

## Lab Control Information

Batch Number	Analyte	Method	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
32165	Ag	EPA 6010	86	89	3	76 - 124	0 - 30
32165	Ba	EPA 6010	90	91	1	76 - 124	0 - 30
32165	Be	EPA 6010	76	77	1	76 - 124	0 - 30
32165	Cd	EPA 6010	83	85	2	76 - 124	0 - 30
32165	Cr	EPA 6010	85	86	1	76 - 124	0 - 30
32165	Cu	EPA 6010	93	94	1	76 - 124	0 - 30
32165	Ni	EPA 6010	86	87	1	76 - 124	0 - 30
32165	Pb	EPA 6010	83	85	2	76 - 124	0 - 30
32165	Sb	EPA 6010	88	88	0	76 - 124	0 - 30
32165	Zn	EPA 6010	79	81	3	76 - 124	0 - 30
32178	Se	EPA 7740	102	98	4	76 - 124	0 - 30
32178	Tl	EPA 7841	111	87	24	76 - 124	0 - 30
32178	As	EPA 7060	82	90	9	76 - 124	0 - 30
32365	Hg	EPA 7471	112	111	1	76 - 124	0 - 30
32369	Hg	EPA 7471	110	110	0	76 - 124	0 - 30
32506	CN	EPA 9010	96	102	6	75 - 125	0 - 30

## Matrix Spike Information

Batch Number	Analyte	Method	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
32165	Ag	EPA 6010	75	74	1	76 - 124	0 - 30
32165	Ba	EPA 6010	76	74	3	76 - 124	0 - 30
32165	Be	EPA 6010	61	60	2	76 - 124	0 - 30
32165	Cd	EPA 6010	57	57	0	76 - 124	0 - 30
32165	Cr	EPA 6010	50	61	20	76 - 124	0 - 30
32165	Cu	EPA 6010	52	51	2	76 - 124	0 - 30
32165	Ni	EPA 6010	64	68	6	76 - 124	0 - 30
32165	Pb	EPA 6010	53	52	2	76 - 124	0 - 30
32165	Sb	EPA 6010	39	34	14	76 - 124	0 - 30
32165	Zn	EPA 6010	32	22	37	76 - 124	0 - 30
32178	Se	EPA 7740	70	67	4	76 - 124	0 - 30
32178	Tl	EPA 7841	100	95	5	76 - 124	0 - 30
32178	As	EPA 7060	0	66	NC	76 - 124	0 - 30
32365	Hg	EPA 7471	104	114	9	76 - 124	0 - 30
32369	Hg	EPA 7471	117	128	9	76 - 124	0 - 30
32506	CN	EPA 9010	103	106	3	75 - 125	0 - 30

Analytical Services Inc. Batch QC  
For Report Number :86235

## Post Digestion Spike Information

Batch Number	Analyte	Method	PDS %Rec	%Recovery Range
32165	Ag	EPA 6010	78	76 - 124
32165	Ba	EPA 6010	79	76 - 124
32165	Be	EPA 6010	63	76 - 124
32165	Cd	EPA 6010	59	76 - 124
32165	Cr	EPA 6010	68	76 - 124
32165	Cu	EPA 6010	64	76 - 124
32165	Ni	EPA 6010	70	76 - 124
32165	Pb	EPA 6010	56	76 - 124
32165	Sb	EPA 6010	74	76 - 124
32165	Zn	EPA 6010	23	76 - 124
32178	Se	EPA 7740	124	76 - 124
32178	Tl	EPA 7841	122	76 - 124
32178	As	EPA 7060	105	76 - 124

## Unspiked Sample Duplicate Information

Batch Number	Analyte	Method	Sample 1 RPD	Sample 2 RPD	RPD Range
32502	%Moist	ASTM D 2216	7		0 - 40
32506	CN	EPA 9010	0	0	0 - 30
32560	%Moist	ASTM D 2216	0		0 - 40

Sample Batch Information  
Analysis : Ag, Ba, Be, Cd, Cr, Cu, Ni, Pb, Sb, Zn

Sample ID	Tag	Preparation			Preparation Notes	Analysis				Inst
		Date	Time	By		Date	Time	By		
32165BLANK		08/26/97	0530	MTK	36	08/26/97	2115	MAB	ICP2	
32165LCS		08/26/97	0530	MTK	36	08/26/97	2118	MAB	ICP2	
32165LCSD		08/26/97	0530	MTK	36	08/26/97	2122	MAB	ICP2	
86235-11MS		08/26/97	0530	MTK	36	08/26/97	2126	MAB	ICP2	
86235-11MSD		08/26/97	0530	MTK	36	08/26/97	2129	MAB	ICP2	
86235-11PDS		08/26/97	0530	MTK	36	08/26/97	2133	MAB	ICP2	
86235-11DUP		08/26/97	0530	MTK	36	08/26/97	2140	MAB	ICP2	
86119-5		08/26/97	0530	MTK	36	08/26/97	2144	MAB	ICP2	
86158-1		08/26/97	0530	MTK	36	08/26/97	2148	MAB	ICP2	
86158-2		08/26/97	0530	MTK	36	08/26/97	2159	MAB	ICP2	
86158-3		08/26/97	0530	MTK	36	08/26/97	2203	MAB	ICP2	
86237		08/26/97	0530	MTK	36	08/26/97	2206	MAB	ICP2	
86235-1		08/26/97	0530	MTK	36	08/26/97	2210	MAB	ICP2	
86235-11		08/26/97	0530	MTK	36	08/26/97	2137	MAB	ICP2	
86235-10		08/26/97	0530	MTK	36	08/26/97	2214	MAB	ICP2	
86235-2		08/26/97	0530	MTK	36	08/26/97	2217	MAB	ICP2	
86235-5		08/26/97	0530	MTK	36	08/26/97	2221	MAB	ICP2	
86235-4		08/26/97	0530	MTK	36	08/26/97	2225	MAB	ICP2	
86235-7		08/26/97	0530	MTK	36	08/26/97	2228	MAB	ICP2	
86235-9		08/26/97	0530	MTK	36	08/26/97	2232	MAB	ICP2	
S-BLK		08/26/97	0530	MTK	36	08/26/97	2309	MAB	ICP2	
HPS		08/26/97	0530	MTK	36	08/26/97	2313	MAB	ICP2	
HPS 690703		08/26/97	0530	MTK	36	08/26/97	2317	MAB	ICP2	
86278		08/26/97	1600	MTK	36	08/26/97	2243	MAB	ICP2	
86279-1		08/26/97	1600	MTK	36	08/26/97	2247	MAB	ICP2	
86279-2		08/26/97	1600	MTK	36	08/26/97	2251	MAB	ICP2	
86280-1		08/26/97	1600	MTK	36	08/26/97	2254	MAB	ICP2	
86280-2		08/26/97	1600	MTK	36	08/26/97	2258	MAB	ICP2	
86280-3		08/26/97	1600	MTK	36	08/26/97	2302	MAB	ICP2	
85795AT2-1		08/26/97	1600	MTK	36	08/26/97	2305	MAB	ICP2	

Sample Batch Information  
Analysis : Se, Tl, As

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
32178BLANK	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
32178LCS	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
32178LCSD	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
86278AT1MS	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
86278AT1MSD	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
86278AT1PDS	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
86278AT1DUP	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
86235-1	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
86235-10	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
86235-11	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
86235-2	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
86235-4	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
86235-5	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
86235-7	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
86235-9	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
86297-1	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
86342-1	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
86342-10	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
86342-12	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
86342-2	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
86342-4	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
86342-6	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
86342-8	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
86360-5	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
86360-6	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
SBLK	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
HPS	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
HPS	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
86278AT1QC	Se	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA1
32178BLANK	Tl	08/29/97	0630	CJC	GFAA	09/02/97	0925	MCW	AA2
32178LCS	Tl	08/29/97	0630	CJC	GFAA	09/02/97	0931	MCW	AA2
32178LCSD	Tl	08/29/97	0630	CJC	GFAA	09/02/97	0937	MCW	AA2
86278AT1MS	Tl	08/29/97	0630	CJC	GFAA	09/02/97	0944	MCW	AA2
86278AT1MSD	Tl	08/29/97	0630	CJC	GFAA	09/02/97	0950	MCW	AA2
86278AT1PDS	Tl	08/29/97	0630	CJC	GFAA	09/02/97	0956	MCW	AA2
86278AT1DUP	Tl	08/29/97	0630	CJC	GFAA	09/02/97	1002	MCW	AA2
86235-1	Tl	08/29/97	0630	CJC	GFAA	09/02/97	1008	MCW	AA2
86235-10	Tl	08/29/97	0630	CJC	GFAA	09/02/97	1015	MCW	AA2
86235-11	Tl	08/29/97	0630	CJC	GFAA	09/02/97	1021	MCW	AA2
86235-2	Tl	08/29/97	0630	CJC	GFAA	09/02/97	1039	MCW	AA2
86235-4	Tl	08/29/97	0630	CJC	GFAA	09/02/97	1046	MCW	AA2
86235-5	Tl	08/29/97	0630	CJC	GFAA	09/02/97	1052	MCW	AA2
86235-7	Tl	08/29/97	0630	CJC	GFAA	09/02/97	1058	MCW	AA2
86235-9	Tl	08/29/97	0630	CJC	GFAA	09/02/97	1104	MCW	AA2
86342-1	Tl	08/29/97	0630	CJC	GFAA	09/02/97	1116	MCW	AA2
86342-10	Tl	08/29/97	0630	CJC	GFAA	09/02/97	1122	MCW	AA2
86342-12	Tl	08/29/97	0630	CJC	GFAA	09/02/97	1128	MCW	AA2
86342-2	Tl	08/29/97	0630	CJC	GFAA	09/02/97	1147	MCW	AA2

Sample Batch Information  
Analysis : Se, Tl, As

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
86342-4	Tl	08/29/97	0630	CJC	GFAA	09/02/97	1153	MCW	AA2
86342-6	Tl	08/29/97	0630	CJC	GFAA	09/02/97	1159	MCW	AA2
86342-8	Tl	08/29/97	0630	CJC	GFAA	09/02/97	1205	MCW	AA2
86360-5	Tl	08/29/97	0630	CJC	GFAA	09/02/97	1211	MCW	AA2
86360-6	Tl	08/29/97	0630	CJC	GFAA	09/02/97	1217	MCW	AA2
86278AT1QC	Tl	08/29/97	0630	CJC	GFAA	09/02/97	1013	MCW	AA2
32178BLANK	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
32178LCS	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
32178LCSD	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
86278AT1MS	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
86278AT1MSD	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
86278AT1PDS	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
86278AT1DUP	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
86235-1	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
86235-10	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
86235-11	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
86235-2	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
86235-4	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
86235-5	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
86235-7	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
86235-9	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
86297-1	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
86342-1	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
86342-10	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
86342-12	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
86342-2	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
86342-4	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
86342-6	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
86342-8	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
86360-5	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
86360-6	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
SBLK	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
HPS	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
HPS	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1
86278AT1QC	As	08/29/97	0630	CJC	GFAA	09/02/97	1340	MCW	AA1



Sample Batch Information  
Analysis : Hg

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
32365BLANK	HG	08/27/97	1935	MB		08/28/97	0855	FBS	HG1
32365LCS	HG	08/27/97	1935	MB		08/28/97	0857	FBS	HG1
32365LCSD	HG	08/27/97	1935	MB		08/28/97	0900	FBS	HG1
86297-1MS	HG	08/27/97	1935	MB		08/28/97	0902	FBS	HG1
86297-1MSD	HG	08/27/97	1935	MB		08/28/97	0904	FBS	HG1
86297-1DUP	HG	08/27/97	1935	MB		08/28/97	0907	FBS	HG1
85565AT1-7	HG	08/27/97	1935	MB		08/28/97	0921	FBS	HG1
85565AT1-8	HG	08/27/97	1935	MB		08/28/97	0928	FBS	HG1
85565AT1-9	HG	08/27/97	1935	MB		08/28/97	0935	FBS	HG1
85565AT1-10	HG	08/27/97	1935	MB		08/28/97	0947	FBS	HG1
85565AT1-11	HG	08/27/97	1935	MB		08/28/97	0955	FBS	HG1
86158-1	HG	08/27/97	1935	MB		08/28/97	1002	FBS	HG1
86158-2	HG	08/27/97	1935	MB		08/28/97	1014	FBS	HG1
86158-3	HG	08/27/97	1935	MB		08/28/97	1021	FBS	HG1
86235-1	HG	08/27/97	1935	MB		08/28/97	1028	FBS	HG1
86235-2	HG	08/27/97	1935	MB		08/28/97	1040	FBS	HG1
86235-4	HG	08/27/97	1935	MB		08/28/97	1102	FBS	HG1
86235-5	HG	08/27/97	1935	MB		08/28/97	1109	FBS	HG1
86235-7	HG	08/27/97	1935	MB		08/28/97	1121	FBS	HG1
86297-1	HG	08/27/97	1935	MB		08/28/97	0909	FBS	HG1
86350	HG	08/27/97	1935	MB		08/28/97	1128	FBS	HG1

Sample Batch Information  
Analysis : Hg

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
32369BLANK	HG	08/28/97	2300	MB		08/29/97	1003	FBS	HG1
32369LCS	HG	08/28/97	2300	MB		08/29/97	1009	FBS	HG1
32369LCSD	HG	08/28/97	2300	MB		08/29/97	1011	FBS	HG1
86235-11MS	HG	08/28/97	2300	MB		08/29/97	1013	FBS	HG1
86235-11MSD	HG	08/28/97	2300	MB		08/29/97	1016	FBS	HG1
86235-11DUP	HG	08/28/97	2300	MB		08/29/97	1018	FBS	HG1
86235-10	HG	08/28/97	2300	MB		08/29/97	1033	FBS	HG1
86235-11	HG	08/28/97	2300	MB		08/29/97	1021	FBS	HG1
86235-9	HG	08/28/97	2300	MB		08/29/97	1040	FBS	HG1
86342-1	HG	08/28/97	2300	MB		08/29/97	1047	FBS	HG1
86342-2	HG	08/28/97	2300	MB		08/29/97	1059	FBS	HG1
86342-4	HG	08/28/97	2300	MB		08/29/97	1106	FBS	HG1
86342-6	HG	08/28/97	2300	MB		08/29/97	1113	FBS	HG1
86342-8	HG	08/28/97	2300	MB		08/29/97	1125	FBS	HG1
86342-12	HG	08/28/97	2300	MB		08/29/97	1132	FBS	HG1
86342-10	HG	08/28/97	2300	MB		08/29/97	1139	FBS	HG1
86278AT1	HG	08/28/97	2300	MB		08/29/97	1151	FBS	HG1

Sample Batch Information  
Analysis : %Moist

Sample ID	Tag	Preparation		Preparation	Analysis			Inst
		Date	Time	Notes	Date	Time	By	
86235-1		/	/		08/28/97	1100	JK	
86235-2		/	/		08/28/97	1100	JK	
86235-4		/	/		08/28/97	1100	JK	
86235-5		/	/		08/28/97	1100	JK	
86235-7		/	/		08/28/97	1100	JK	
86235-9		/	/		08/28/97	1100	JK	
86235-10		/	/		08/28/97	1100	JK	
86235-11		/	/		08/28/97	1100	JK	
86235-11DUP		/	/		08/28/97	1100	JK	

Sample Batch Information  
Analysis : CN

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
32506BLK		09/02/97	0800	ARS	MIDI-DIST	09/02/97	1040	ARS	GENE5
32506LCS		09/02/97	0800	ARS	MIDI-DIST	09/02/97	1040	ARS	GENE5
32506LCSD		09/02/97	0800	ARS	MIDI-DIST	09/02/97	1040	ARS	GENE5
86173-15MS		09/02/97	0800	ARS	AKA 86173-16	A09/02/97	1040	ARS	GENE5
86173-15MSD		09/02/97	0800	ARS	AKA 86173-16	A09/02/97	1040	ARS	GENE5
86173-12		09/02/97	0800	ARS	MIDI-DIST	09/02/97	1040	ARS	GENE5
86173-13		09/02/97	0800	ARS	MIDI-DIST	09/02/97	1040	ARS	GENE5
86173-14		09/02/97	0800	ARS	MIDI-DIST	09/02/97	1040	ARS	GENE5
86173-15		09/02/97	0800	ARS	MIDI-DIST	09/02/97	1040	ARS	GENE5
86173-17		09/02/97	0800	ARS	MIDI-DIST	09/02/97	1040	ARS	GENE5
86235-1		09/02/97	1005	ARS	MIDI-DIST	09/02/97	1240	ARS	GENE5
32506CAL5		09/02/97	1005	ARS	MIDI-DIST	09/02/97	1240	ARS	GENE5
32506CAL15		09/02/97	1005	ARS	MIDI-DIST	09/02/97	1240	ARS	GENE5
86235-2		09/02/97	1005	ARS	MIDI-DIST	09/02/97	1240	ARS	GENE5
86235-4		09/02/97	1005	ARS	MIDI-DIST	09/02/97	1240	ARS	GENE5
86235-5		09/02/97	1005	ARS	MIDI-DIST	09/02/97	1240	ARS	GENE5
86235-7		09/02/97	1005	ARS	MIDI-DIST	09/02/97	1240	ARS	GENE5
86235-9		09/02/97	1005	ARS	MIDI-DIST	09/02/97	1240	ARS	GENE5
86235-10		09/02/97	1005	ARS	MIDI-DIST	09/02/97	1240	ARS	GENE5
86235-11		09/02/97	1005	ARS	MIDI-DIST	09/02/97	1240	ARS	GENE5
86173-18		09/02/97	1210	ARS	MIDI-DIST	09/02/97	1425	ARS	GENE5
86173-18DUP		09/02/97	1210	ARS	MIDI-DIST	09/02/97	1425	ARS	GENE5
86173-19		09/02/97	1210	ARS	MIDI-DIST	09/02/97	1425	ARS	GENE5
86173-19DUP		09/02/97	1210	ARS	MIDI-DIST	09/02/97	1425	ARS	GENE5

Sample Batch Information  
Analysis : %Moist

Sample ID	Tag	Preparation		Preparation	Analysis			Inst
		Date	Time	By	Date	Time	By	
86235-3		/	/		09/03/97	1300	EKT	
86235-6		/	/		09/03/97	1300	EKT	
86235-8		/	/		09/03/97	1300	EKT	
86235-12		/	/		09/03/97	1300	EKT	
86235-12DUP		/	/		09/03/97	1300	EKT	

Project Number TF0320.015

Project Location Gross - B'ham, AL

Laboratory ASI

Sampler(s)/Affiliation J. Hughes / GSI

SAMPLE IDENTITY		Date/Time Sampled	Lab ID	SAMPLE BOTTLE / CONTAINER DESCRIPTION										TOTAL	
970822-LD-1W-S0021	S	8/22/97 1055		EPA 8260 4oz Glass Jar	EPA 8270 8oz Glass Jar - Arsenic	PTM + Bq 8oz Glass Jar - Arsenic	CYANIDE 8oz Glass Jar - Arsenic	EPA 8260 40mL Glass Vial HCL	EPA 8270 4oz Glass Jar	EPA 8260 4oz Glass Jar	CYANIDE 4oz Glass Jar			4	1
970822-LD-1W-S0035A	S	↑ 1115												4	2
970822-LD-1W-S0035B	S	1115												1	3
970822-LD-1W-S0037	S	1445												4	4
970822-LD-1W-S0033A	S	1515												4	5
970822-LD-1W-S0033B	S	1515												1	6
970822-LD-1W-S0033C	S	1515												1	7
970822-LD-1W-S0031A	S	1545												4	8
970822-LD-1W-S0031B	S	1545												1	9
970822-LD-1W-S0031C	S	1545												1	10
970822-LD-1W-S0032	S	1625												4	11
970822-LD-1W-S0035	S	1640												4	12
970822-LD-1W-S9999A	S	1705												4	13
970822-LD-1W-S9999B	S	↓ 1705												1	14
970822-LD-1W-TB0001	L	8/22/97 1715						3						3	15

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 41

Relinquished by: <u>[Signature]</u>	Organization: <u>GSI (TAMPA)</u>	Date: <u>8/22/97</u>	Time: <u>1800</u>	Seal Intact?
Received by: <u>[Signature]</u>	Organization: <u></u>	Date: <u>1/1/97</u>	Time: <u></u>	Yes No N/A
Relinquished by: <u>[Signature]</u>	Organization: <u></u>	Date: <u>1/1/97</u>	Time: <u></u>	Seal Intact?
Received by: <u>[Signature]</u>	Organization: <u>ASI</u>	Date: <u>8/25/97</u>	Time: <u>10:20</u>	Yes No N/A

Special Instructions/Remarks:

DIRECT ANY AND ALL QUESTIONS TO KATHY TALAMAN AT 813 561 1921 temp=5C, pH=n/a,  
ASI LOT 1208 1) Composite VOCs from these to T102 (e.g. 970822-LD-1W-S0035 A/B Composite VOCs) FedEx # 13212571  
 Deliver Method: ☐ In Person ☒ Common Carrier FE-X ☐ Lab Courier ☐ Other

**VOLUME III**  
**GROUNDWATER**

**0749**

# SLOSS INDUSTRIES

## DATA VALIDATION CHECKLIST

PROJECT NAME  
PROJECT NUMBER  
SAMPLE  
IDENTIFICATION(S)

Sloss Industries			
TF320.015			
970818-LD-23-GW0022	970818-LD-23-GW0022	970819-LD-23-GW0025S	
970818-LD-23-GW0021	970819-LD-23-GW0025D	970819-LD-23-GW9025	
970818-LD-23-GW0023	970819-LD-23-EB0002	970819-LD-23-GW0029	18/9
970818-LD-23-GW0024 a	970819-LD-23-FB0002	970819-LD-23-GW0028	
970818-LD-23-TB0002	970819-LD-23-TB0003		
(a) Additional sample collected for MS/MSD			
August 18 through 19, 1997			
Joe Hughes and David Page			
Groundwater			
Analytical Services, Inc.			
Cyanide (9010), PPT Metals, 8260, 8270			
Geraghty & Miller, Inc./Level II			
86126			
October 16, 1997			

SAMPLE DATE (S)  
SAMPLE TEAM  
SAMPLE MATRIX  
ANALYZING LABORATORY  
ANALYSES REQUESTED  
QA REPORTING LEVEL  
LABORATORY REPORT NO.  
VALIDATION DATE

## FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: *	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Sampling dates noted		X		X	
2. Sampling team indicated		X		X	
3. Sampling identification traceable to location collected		X		X	
4. Sample location		X		X	
5. Sample depth for soils		X		X	
6. Collection technique (bailer, pump, etc.)		X		X	
7. Field sample preparation techniques		X		X	
8. Sample type (grab, composite)		X		X	
9. Sample container type		X		X	
10. Preservation methods		X		X	
11. Chain-of-custody form completed		X		X	
12. Required analytical methods requested		X		X	
13. Field (water and soil) sample logs completed properly and signed		X		X	
14. Number and type of field QC samples collected (blanks, replicates, splits, etc.)		X		X <sup>(1)</sup>	
15. Field equipment calibration		X		X	
16. Field equipment decontamination		X		X	
17. Sample shipping		X		X	
18. Laboratory task order		X		X	

\* Field sampling logs = water and/or soil/sediment sampling logs



## FIELD DATA PACKAGE DOCUMENTATION

### COMMENTS:

1) Field QC samples collected

Field Duplicate Pair      970819-LD-23-GW0025D and 970819-LD-23-GW9025D

MS/MSD                      970818-LD-23-GW0024

Blanks                      970818-LD-23-TB0002    Trip Blank  
                                  970819-LD-23-EB0002    Equipment Blank  
                                  970819-LD-23-FB0002    Field Blank  
                                  970819-LD-23-TB0003    Trip Blank

Slit with Guardian:      970819-LD-23-GW0025D Reviewed under separate cover.

## ANALYTICAL DATA PACKAGE DOCUMENTATION GENERAL INFORMATION

ALL QA REPORTING LEVELS:	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Method of analysis		X		X	
4. Detection limits of analysis		X		X	
5. Master tracking list		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preparation/extraction date		X		X	
9. Sample analysis date		X		X	
10. Copy of chain-of-custody form signed by lab sample custodian		X		X	
11. Narrative summary of QA or sample problems provided		X		X	

QA - quality assurance

COMMENTS : No qualification was necessary.

All analytical data were reported as Geraghty & Miller Level II data deliverables

**INORGANIC ANALYSES  
TOTAL METALS METHODS**

QA REPORTING LEVEL II REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Holding times		X		X	
2. Detection limits		X		X	
3. Calibration curve standards	X				X
4. Initial calibration verification %R	X				X
5. Continuing calibration verification %R	X				X
6. Blanks					
A. Preparation and calibration blanks		X		X	
B. Equipment rinsate blanks		X		X	
C. Field blanks		X		X	
7. Interference check sample %R (ICP only)	X				X
8. Dilution check sample %R (ICP only)	X				X
9. Laboratory control sample %R		X		X	
10. Matrix spike %R		X		X	
11. Lab duplicate or MSD %R and RPD		X		X	
12. LCS duplicate %R and RPD		X		X	
13. Post-digestion analytical spike (FAA only)		X		X	
14. Field duplicate comparison		X		X	
15. Total and dissolved metals comparison	X				X

%R - percent recovery

RPD - relative percent difference

MSD - matrix spike duplicate

ICP - inductively coupled plasma atomic emission spectroscopy

FAA - furnace atomic absorption

NA - not applicable or not analyzed

**COMMENTS:**

This section was completed for Priority Pollutant Metals. Sloss groundwater data were qualified for each of the corresponding analytical batches where MS/MSD and PDS recoveries did not meet the control limit criteria. All qualified soil analytical results are summarized in the attached Table.

Analytical Batch	Analyte
32159	Arsenic
32160	Arsenic, Selenium

**INORGANIC ANALYSES  
WET CHEMISTRY METHODS**

QA REPORTING LEVEL II REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Holding times		X		X	
2. Detection limits		X		X	
3. Calibration curve standards	X				X
4. Initial calibration verification %R	X				X
5. Continuing calibration verification %R	X				X
6. Blanks					
A. Preparation and calibration blanks		X		X	
B. Equipment rinsate blanks		X		X	
C. Field blanks		X		X	
7. Laboratory control sample %R		X		X	
8. Matrix spike %R		X		X	
9. Lab duplicate or MSD %R and RPD		X		X	
10. LCS duplicate %R and RPD		X		X	
11. Field duplicate comparison	X				X

%R - percent recovery

RPD - relative percent difference

MSD - matrix spike duplicate

LCS - laboratory control sample duplicate

NA - not applicable or not analyzed

**COMMENTS:**

This section was completed for cyanide data. Performance was acceptable. No sample qualification was necessary.

**ORGANIC ANALYSES  
VOLATILE ORGANIC COMPOUNDS**

QA REPORTING LEVEL II REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
<b>GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)</b>					
1. Holding times		X		X	
2. Detection limits		X		X	
3. Blanks					
A. Water blanks (VOCs)		X		X	
B. Equipment rinsate blanks		X		X	
C. Field Blanks		X		X	
D. Trip blanks		X		X	
4. Instrument tune and performance check	X				X
5. Initial calibration RRFs and %RSDs	X				X
6. Continuing calibration RRFs and %Ds	X				X
7. Matrix spike (MS) %R		X		X	
8. Matrix spike duplicate (MSD) %R		X		X	
9. Sample specific lab duplicate (optional)	X				X
10. MS/MSD or lab duplicate precision (RPD)		X		X	
11. Reagent water spike (BS)		X		X	
12. Reagent water spike duplicate (BSD)		X		X	
13. BS/BSD precision (RPD)		X		X	
14. Laboratory control sample (optional)		X		X	
15. Surrogate spike recoveries		X		X <sup>1</sup>	
16. Internal standard retention times and areas	X				X
17. Compound identification and quantitation					
A. Reconstructed ion chromatograms	X				X
B. Quantitation reports	X				X
18. TIC search (optional)	X				X
19. Field duplicate comparison	X				X

VOCs - volatile organic compounds

RRF - relative response factor

% RSD - percent relative standard deviation

%D - percent drift

%R - percent recovery

RPD - relative percent difference

BS - blank spike

BSD - blank spike duplicate

TIC - tentatively identified compound

COMMENTS: This section was completed for volatiles Method 8260. Performance was acceptable. No sample qualification was necessary.

**ORGANIC ANALYSES  
SEMIVOLATILE ORGANIC COMPOUNDS**

QA REPORTING LEVEL II REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	

**GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)**

**1. Holding times**

- A. Extraction holding time  
B. Analysis holding time

	X		X	
	X		X	

**2. Detection limits**

	X		X	
--	---	--	---	--

**3. Blanks**

- A. Water blanks  
B. Extraction blanks  
C. Equipment rinsate blanks  
D. Field Blanks

	X		X	
	X		X	
	X		X	
	X		X	

**4. Instrument tune and performance check**

X				X
---	--	--	--	---

**5. Initial calibration RRFs and %RSDs**

X				X
---	--	--	--	---

**6. Continuing calibration RRFs and %Ds**

X				X
---	--	--	--	---

**7. Matrix spike (MS) %R**

	X		X	
--	---	--	---	--

**8. Matrix spike duplicate (MSD) %R**

	X		X	
--	---	--	---	--

**9. Sample specific lab duplicate (optional)**

X				X
---	--	--	--	---

**10. MS/MSD or lab duplicate precision (RPD)**

	X		X	
--	---	--	---	--

**11. Laboratory control sample (LCS)**

	X		X	
--	---	--	---	--

**12. LCS duplicate (LCSD)**

	X		X	
--	---	--	---	--

**13. LCS/LCSD precision (RPD)**

	X		X	
--	---	--	---	--

**14. Surrogate spike recoveries**

	X		X <sup>(1)</sup>	
--	---	--	------------------	--

**15. Internal standard retention times and areas**

X				X
---	--	--	--	---

**16. Compound identification and quantitation**

- A. Reconstructed ion chromatograms  
B. Quantitation reports

X				X
X				X

**17. TIC search (optional)**

X				X
---	--	--	--	---

**18. Field duplicate comparison**

X				X
---	--	--	--	---

SVOCs - semivolatile organic compounds  
RRF - relative response factor  
% RSD - percent relative standard deviation

%D - percent drift  
%R - percent recovery  
RPD - relative percent difference

TIC - tentatively identified compound

**COMMENTS:** This section was completed for semivolatile Method 8270. Performance was acceptable with the following exceptions and notes. All qualified analytical results are summarized in the attached table.

1. The following sample was qualified based on surrogate recoveries; 2-fluorophenol 10%, and phenol-d5 6 %.  
970818-LD-23-GW0024 -- ACID FRACTION ONLY/Phenolic compounds - Qualify all analytical results < BDL as R/Rejected

A summary of qualified analytical results associated with this data set are presented in the attached table.

VALIDATION PERFORMED BY: Cynthia Arnold

SIGNATURE: Cynthia Arnold  
DATE: 10/16/97

Summary of Qual Analytical Results  
for Groundwater  
ASI Data Package 86126  
Sloss Industries, Birmingham, AL

Page 1 of 1

G & M Sample LD.	Analyte	Concentration Detected	Qualifier	Reasons for Qualification
<i>ASI Laboratory Report No 86126</i>				
970818-LD-23-GW0022	Arsenic	BDL	UJ	MS/MSD and PDS out of control limit criteria
970818-LD-23-GW0021	Arsenic	BDL	UJ	MS/MSD and PDS out of control limit criteria
970818-LD-23-GW0023	Arsenic	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Selenium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970818-LD-23-GW0024	8270	All Phenol compds <sup>(1)</sup>	R	Surrogate spike recoveries were out of control limit criteria
	Arsenic	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Selenium	BDL	UJ	MS/MSD and PDS out of control limit criteria
* 970819-LD-23-GW0025D	Arsenic	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Selenium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970819-LD-23-GW0025S	Arsenic	BDL	UJ	MS/MSD and PDS out of control limit criteria
* 970819-LD-23-GW9025D	Arsenic	BDL	UJ	MS/MSD and PDS out of control limit criteria
970819-LD-23-GW0029	Arsenic	BDL	UJ	MS/MSD and PDS out of control limit criteria
970819-LD-23-GW0028	Arsenic	BDL	UJ	MS/MSD and PDS out of control limit criteria

Notes:

U - Non-detect

UJ - Non-detected estimated

J - Estimated

R - Rejected

(1) BNA/8270 Phenolic Compound List - are those compounds listed as Acid Extractable Organics (EPA 8270B)  
All of which contain phenol. Please see the lab report.

10/16/97





# ANALYTICAL SERVICES, INC.

ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

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(770) 734-4200 • FAX (770) 734-4201

9/19/97

## Master List ASI #86126

Sample #	G&M ID	Analysis	Notes
86126-1	978018-LD-23-GW0022	9010,8260,8270,Metals	
86126-2	970818-LD-23-GW0021	9010,8260,8270,Metals	
86126-3	970818-LD-23-GW0023	9010,8260,8270,Metals	Sample time 16:45 per container
86126-4	970818-LD-23-GW0024	9010,8260,8270,Metals	
86126-5	970818-LD-23-GW0024MS/MSD	9010,8260,8270,Metals	
86126-6	970818-LD-23-TB0002	8260	
86126-7	970819-LD-23-GW0025D	9010,8260,8270,Metals	
86126-8	970819-LD-23-EB0002	9010,8260,8270,Metals	
86126-9	970819-LD-23-FB0002	9010,8260,8270,Metals	
86126-10	970819-LD-23-TB0003	8260	
86126-11	970819-LD-23-GW0025S	9010,8260,8270,Metals	
86126-12	970819-LD-23-GW9025D	9010,8260,8270,Metals	
86126-13	970819-LD- <del>23</del> <sup>38</sup> -GW0029	9010,8260,8270,Metals	
86126-14	970819-LD- <del>23</del> <sup>38</sup> -GW0028	9010,8260,8270,Metals	

Kx 12/18/97

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Project Name: Sloss Industries

Project Number: TF0320.015

TEST	S86126_1	S86126_2	S86126_3	S86126_4	S86126_6
Sample ID :	978018-LD-23-GW0022	970818-LD-23-GW0021	970818-LD-23-GW0023	970818-LD-23-GW0024	970818-LD-23-TB0002
<b>Cyanide</b>	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Total Cyanide (CN)		0.05			
<b>Metals</b>	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Total Barium (Ba)(EPA 6010A)	0.05	0.14	0.09	0.07	
Total Chromium (Cr)(EPA 6010A)		0.02	0.01	0.01	
Total Copper (Cu)(EPA 6010A)					
Total Nickel (Ni)(EPA 6010A)		0.02		0.02	
Total Zinc (Zn)(EPA 6010A)	0.05		0.11	0.09	
<b>Volatile Organics (EPA 8260A)</b>	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Acetone	110				
Trichloroethene					
<b>Acid Extractable Organics (EPA 8270B)</b>	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
<b>Base Neutral Extractable Organics (EPA 8270B)</b>	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)

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Project Name: Sloss Industries

Project Number: TF0320.015

TEST	S86126_7	S86126_8	S86126_9	S86126_10	S86126_11
Sample ID :	970819-LD-23-GW0025D	970819-LD-23-EB0002	970819-LD-23-FB0002	970819-LD-23-TB0003	970819-LD-23-GW0025S
Cyanide	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Total Cyanide (CN)					
Metals	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Total Barium (Ba)(EPA 6010A)	0.28				0.10
Total Chromium (Cr)(EPA 6010A)	0.03				
Total Copper (Cu)(EPA 6010A)	0.02				0.02
Total Nickel (Ni)(EPA 6010A)	0.04				
Total Zinc (Zn)(EPA 6010A)	0.09				0.06
Volatile Organics (EPA 8260A)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Acetone					
Trichloroethene					
Acid Extractable Organics (EPA 8270B)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
Base Neutral Extractable Organics (EPA 8270B)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)

Project Name: Sloss Industries

Project Number: TF0320.015

(cf) 12/18/97.

TEST	S86126_12	S86126_13	S86126_14
Sample ID :	970819-LD-23-GW9025D	970819-LD-23-GW0029	970819-LD-23-GW0028
<b>Cyanide</b>	(mg/L)	(mg/L)	(mg/L)
Total Cyanide (CN)			
<b>Metals</b>	(mg/L)	(mg/L)	(mg/L)
Total Barium (Ba)(EPA 6010A)	0.29	0.51	0.14
Total Chromium (Cr)(EPA 6010A)	0.03		
Total Copper (Cu)(EPA 6010A)	0.02		
Total Nickel (Ni)(EPA 6010A)	0.04		
Total Zinc (Zn)(EPA 6010A)	0.11	0.06	
<b>Volatile Organics (EPA 8260A)</b>	(ug/l)	(ug/l)	(ug/l)
Acetone			
Trichloroethene		3	
<b>Acid Extractable Organics (EPA 8270B)</b>	(ug/L)	(ug/L)	(ug/L)
<b>Base Neutral Extractable Organics (EPA 8270B)</b>	(ug/L)	(ug/L)	(ug/L)

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# ANALYTICAL SERVICES, INC.

ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

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(770) 734-4200 • FAX (770) 734-4201

17 September, 1997

## Case Narrative Report 86126

The samples were collected on 18-19 August, 1997 and received by ASI 20 August, 1997. Conditions of sample receipt were documented on the Chain of Custody. The samples were logged into the LIMS as report 86126 for the following analyses as per client request: BNA (EPA 8270), VOA (EPA 8260), Metals (EPA 6010, 7060, 7841, 7740, 7470), and CN (EPA 9010). All holding times for sample preparation and analysis were met.

BNA analysis (EPA 8270) gave acceptable spike recoveries. Samples 86126-7, 86126-8, 86126-11 and 86126-12 were re-extracted and reanalyzed due to a possible phthalate contamination. All reanalyses resulted in BDL for Bis(2-ethylhexyl)phthalate. Samples 86126-1, 86126-2, 86126-3, 86126-5MS and 86126-5MSD gave high Terphenyl-d14, 86126-4, 86126-5MS, 86126-5MSD and 86126-11RR gave low 2-Fluorophenol, 86126-4 gave low Phenol-d5, 86126-11 gave high Nitrobenzene-d5, and 86126-14DUP gave high 2-Fluorophenol.

VOA analysis (EPA 8260) gave acceptable spike and surrogate recoveries with the single exception of low Toluene-d8 on 86126-13. That sample was reanalyzed with acceptable surrogate recovery.

Metals analysis (EPA 6010) gave low MS/MSD for Ni and Zn. All other quality controls were acceptable. As analysis (EPA 7060) was split into two batches. Batch #32159 gave low MS/MSD/PDS. Batch #32160 gave low MS/MSD/PDS. Tl analysis (EPA 7841) was split into two batches. Both batches met all data quality objectives. Se analysis (EPA 7740) was split into two batches. Batch #32159 met all data quality objectives. Batch #32160 gave low MS/MSD and high PDS. Hg analysis (EPA 7470) was split into two batches. Both batches met all data quality objectives.

CN analysis (EPA 9010) met all data quality objectives.

for  
Roy-Keith Smith, PhD  
Quality Assurance Manager

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A Unit of American Analytical Services, Inc.



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86126-1

September 19, 1997

### Sample Description

Sloss Industries

Groundwater, G & M Project #TF0320.015, 970818-LD-23-GW0022, 08/18/97, 12:05, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	0.05	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 601C
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	0.05	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	110	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

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## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970818-LD-23-GW0022, 08/18/97, 12:05, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100-125	Styrene	BDL	5	ug/l	1	EPA 8260A
100-5	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
37650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
30755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
1027	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
37865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970818-LD-23-GW0022, 08/18/97, 12:05, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 827C
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

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**Sample Description**

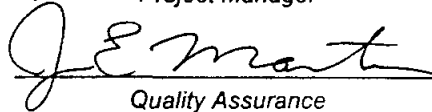
Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970818-LD-23-GW0022, 08/18/97, 12:05, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



**Laboratory Report**

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86126-2

September 19, 1997

**Sample Description**

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970818-LD-23-GW0021, 08/18/97, 14:10, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	0.05	0.02	mg/l	1	EPA 9010A
<b>Priority Pollutant Metals</b>						
<b>Metals</b>						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	0.14	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	0.02	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	0.02	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
<b>Volatile Organics (EPA 8260A)</b>						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970818-LD-23-GW0021, 08/18/97, 14:10, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100125	Styrene	BDL	5	ug/l	1	EPA 8260A
100145	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
100755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
100127	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970818-LD-23-GW0021, 08/18/97, 14:10, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

0770

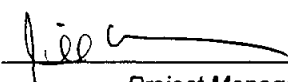
**Sample Description**

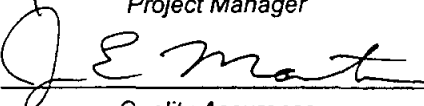
Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970818-LD-23-GW0021, 08/18/97, 14:10, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance

**Laboratory Report**

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 86126-3

September 19, 1997

**Sample Description**

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970818-LD-23-GW0023, 08/18/97, 16:45, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
<b>Priority Pollutant Metals</b>						
<b>Metals</b>						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	0.09	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010
7440473	Total Chromium	0.01	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	0.11	0.02	mg/l	1	EPA 6010A
<b>Volatile Organics (EPA 8260A)</b>						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0772

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970818-LD-23-GW0023, 08/18/97, 16:45, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
100415	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
1004184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
100427	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
100465	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

0773

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970818-LD-23-GW0023, 08/18/97, 16:45, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

0774

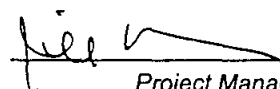
## Sample Description

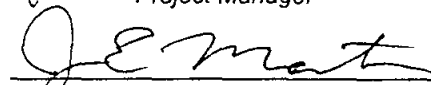
Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970818-LD-23-GW0023, 08/18/97, 16:45, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance





# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86126-4

September 19, 1997

### Sample Description

Sloss Industries

Groundwater, G & M Project #TF0320.015, 970818-LD-23-GW0024, 08/18/97, 18:50, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	0.07	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	0.01	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	0.02	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	0.09	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0776

Page 1 of 1

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970818-LD-23-GW0024, 08/18/97, 18:50, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
5	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
27	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

0777

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970818-LD-23-GW0024, 08/18/97, 18:50, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit


## Sample Description

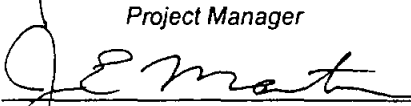
Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970818-LD-23-GW0024, 08/18/97, 18:50, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 86126-5

September 19, 1997

### Sample Description

Sloss Industries

Groundwater, G & M Project #TF0320.015, 970818-LD-23-GW0024MS, 08/18/97, 18:50, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	0.17	0.02	mg/l	1	EPA 9010A
<b>Priority Pollutant Metals</b>						
<b>Metals</b>						
7440360	Total Antimony	2.3	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	0.052	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	8.4	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	1.0	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	0.40	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	0.90	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	1.1	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	3.9	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	2.16	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	1.9	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	0.017	0.04	mg/l	1	EPA 7740
7440224	Total Silver	0.23	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	0.068	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	1.9	0.02	mg/l	1	EPA 6010A
<b>Volatile Organics (EPA 8260A)</b>						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	50	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	49	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0760

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970818-LD-23-GW0024MS, 08/18/97, 18:50, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	48	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100025	Styrene	BDL	5	ug/l	1	EPA 8260A
7165	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	49	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	46	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	60	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	74	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
80055	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
10027	4-Nitrophenol	86	50	ug/l	1	EPA 8270B
37865	Pentachlorophenol	110	10	ug/l	1	EPA 8270B
108952	Phenol	35	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970818-LD-23-GW0024MS, 08/18/97, 18:50, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	99	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	74	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	76	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

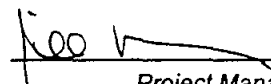
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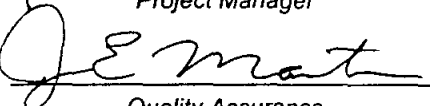
Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970818-LD-23-GW0024MS, 08/18/97, 18:50, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	71	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	100	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	87	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



**Laboratory Report**

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: **86126-6**

September 19, 1997

**Sample Description**

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970818-LD-23-TB0002, 08/18/97, 19:05, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
<b>Volatile Organics (EPA 8260A)</b>						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A

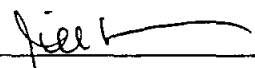
## Sample Description

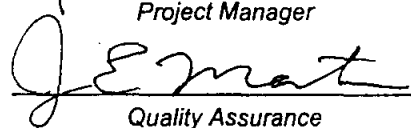
Sloss Industries

Water, G &amp; M Project #TF0320.015, 970818-LD-23-TB0002, 08/18/97, 19:05, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86126-7

September 19, 1997

### Sample Description

Sloss Industries

Groundwater, G & M Project #TF0320.015, 970819-LD-23-GW0025, 08/19/97, 10:30, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	0.28	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010/
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	0.03	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	0.02	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	0.04	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	0.09	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260/
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0786

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970819-LD-23-GW0025, 08/19/97, 10:30, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
127184	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
127	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
8765	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970819-LD-23-GW0025, 08/19/97, 10:30, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270L
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

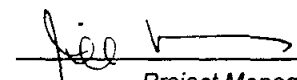
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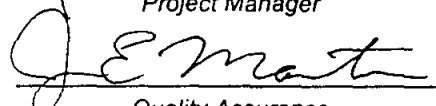
Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970819-LD-23-GW0025, 08/19/97, 10:30, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 86126-8

September 19, 1997

### Sample Description

Sloss Industries

Water, G & M Project #TF0320.015, 970819-LD-23-EB0002, 08/19/97, 9:15, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	BDL	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0790

## Sample Description

Gloss Industries

Water, G &amp; M Project #TF0320.015, 970819-LD-23-EB0002, 08/19/97, 9:15, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
127184	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
127	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
8765	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit



## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970819-LD-23-EB0002, 08/19/97, 9:15, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

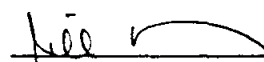
## Sample Description


Sloss Industries

Water, G &amp; M Project #TF0320.015, 970819-LD-23-EB0002, 08/19/97, 9:15, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
93953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86126-9

September 19, 1997

### Sample Description

Sloss Industries

Water, G & M Project #TF0320.015, 970819-LD-23-FB0002, 08/19/97, 8:50, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	BDL	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0794

## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970819-LD-23-FB0002, 08/19/97, 8:50, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
100445	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
80055	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
100427	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970819-LD-23-FB0002, 08/19/97, 8:50, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

0796

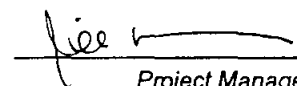
## Sample Description

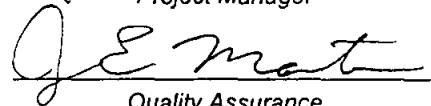
Sloss Industries

Water, G &amp; M Project #TF0320.015, 970819-LD-23-FB0002, 08/19/97, 8:50, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86126-10

September 19, 1997

### Sample Description

Sloss Industries

Water, G & M Project #TF0320.015, 970819-LD-23-TB0003, 08/19/97, 9:30, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0798

Page 1 of 2

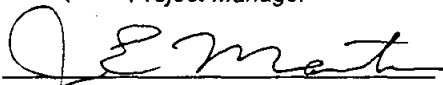
## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970819-LD-23-TB0003, 08/19/97, 9:30, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A

Respectfully submitted,

  
Project Manager  
Quality Assurance





# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 86126-11

September 19, 1997

### Sample Description

Sloss Industries

Groundwater, G & M Project #TF0320.015, 970819-LD-23-GW0025S, 08/19/97, 12:25, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
<b>Priority Pollutant Metals</b>						
<b>Metals</b>						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	0.10	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	0.02	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	0.06	0.02	mg/l	1	EPA 6010A
<b>Volatile Organics (EPA 8260A)</b>						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0800

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970819-LD-23-GW0025S, 08/19/97, 12:25, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100125	Styrene	BDL	5	ug/l	1	EPA 8260A
5	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
80755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
27	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

0801

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970819-LD-23-GW0025S, 08/19/97, 12:25, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

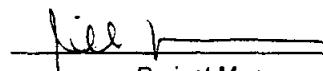
**Sample Description**

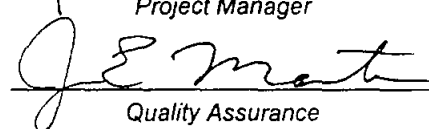
Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970819-LD-23-GW0025S, 08/19/97, 12:25, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86126-12

September 19, 1997

### Sample Description

Sloss Industries

Groundwater, G & M Project #TF0320.015, 970819-LD-23-GW9025D, 08/19/97,, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	0.29	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	0.03	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	0.02	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	0.04	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	0.11	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0804

Page 1 of 4

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970819-LD-23-GW9025D, 08/19/97,, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
127184	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
1027	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970819-LD-23-GW9025D, 08/19/97,, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970819-LD-23-GW9025D, 08/19/97,, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance





# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86126-13

September 19, 1997

### Sample Description

Sloss Industries

Groundwater, G & M Project #TF0320.015, 970819-LD-23-GW0029, 08/19/97, 13:30, received 08/20/97

38

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	0.51	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	0.06	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0808

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970819-LD-23-GW0029, 08/19/97, 13:30, received 08/20/97

38

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
127184	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	3	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
1027	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970819-LD-28-GW0029, 08/19/97, 13:30, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270E
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit


## Sample Description

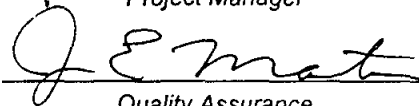
Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970819-LD-28-GW0029, 08/19/97, 13:30, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries

3500 35th Avenue N

Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86126-14

September 19, 1997

### Sample Description

Sloss Industries

Groundwater, G & M Project #TF0320.015, 970819-LD-28-GW0028, 08/19/97, 14:50, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	0.14	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0812

## Sample Description

Gloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970819-LD-25-GW0028, 08/19/97, 14:50, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
127184	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
27	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

## Sample Description 12/18/97

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970819-LD-23-GW0028, 08/19/97, 14:50, received 08/20/97

38

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

0814

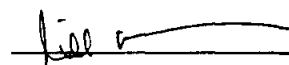
## Sample Description


Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970819-LD-28-GW0028, 08/19/97, 14:50, received 08/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance





# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86126-15

September 19, 1997

### Sample Description

Sloss Industries  
Aqueous,, Batch # 32128,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
100027	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

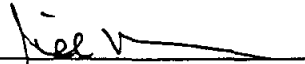
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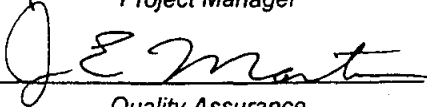
Page 1 of 2

**Sample Description**  
 Sloss Industries  
 Aqueous,, Batch # 32128,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
193395	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
78591	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
91576	Isophorone	BDL	10	ug/l	1	EPA 8270B
91203	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
88744	Naphthalene	BDL	10	ug/l	1	EPA 8270B
99092	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
98953	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
62759	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
85018	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
129000	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyrene	BDL	10	ug/l	1	EPA 8270B
120821	Pyridine	BDL	10	ug/l	1	EPA 8270B
	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
 Project Manager

  
 Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86126-16

September 19, 1997

### Sample Description

Sloss Industries  
Aqueous,, Batch # 32492,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

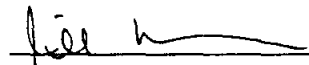
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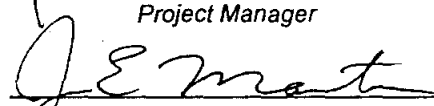
Page 1 of 2

**Sample Description**  
Sloss Industries  
Aqueous,, Batch # 32492,,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 86126-17

September 19, 1997

### Sample Description

Sloss Industries

Groundwater, G & M Project #TF0320.015, 970818-LD-23-GW0024SMSD, 8/18/97, 18:50, received 8/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	0.17	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	2.4	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	0.061	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	8.4	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	1.0	0.005	mg/l	1	EPA 6010.
7440439	Total Cadmium	0.40	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	0.90	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	1.1	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	3.9	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	2.3	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	1.9	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	0.018	0.04	mg/l	1	EPA 7740
7440224	Total Silver	0.23	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	0.067	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	1.9	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	50	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	51	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260.
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0820

**Sample Description**

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970818-LD-23-GW0024SMSD, 8/18/97, 18:50, received 8/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	47	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
127184	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	50	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	47	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	71	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	83	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
127	4-Nitrophenol	80	50	ug/l	1	EPA 8270B
87665	Pentachlorophenol	100	10	ug/l	1	EPA 8270B
108952	Phenol	39	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970818-LD-23-GW0024SMSD, 8/18/97, 18:50, received 8/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	98	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	65	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	80	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

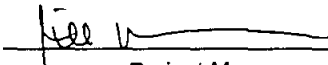
**Sample Description**


Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970818-LD-23-GW0024SMSD, 8/18/97, 18:50, received 8/20/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	71	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	99	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	80	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



Analytical Services Inc. Batch QC  
 For Report Number :86126  
 Base Neutrals / Acids

Matrix : Aqueous

Batch # 32128

Method : EPA 8270

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
Phenol	37	34	10	12 - 89	0 - 42
2-Chlorophenol	73	63	16	27 - 123	0 - 40
1,4-Dichlorobenzene	62	60	3	36 - 97	0 - 28
N-Nitrosodipropylamine	77	60	25	41 - 116	0 - 38
1,2,4-Trichlorobenzene	74	68	9	44 - 142	0 - 28
4-Chloro-3-methylphenol	70	68	3	23 - 97	0 - 42
Acenaphthene	103	85	20	46 - 118	0 - 31
2,4-Dinitrotoluene	81	68	17	24 - 96	0 - 38
4-Nitrophenol	14	15	9	10 - 80	0 - 50
Pentachlorophenol	53	60	12	9 - 103	0 - 50
Pyrene	106	110	3	26 - 127	0 - 31

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
Phenol	18	20	9	12 - 89	0 - 42
2-Chlorophenol	38	43	12	27 - 123	0 - 40
1,4-Dichlorobenzene	77	67	14	36 - 97	0 - 28
N-Nitrosodipropylamine	74	74	0	41 - 116	0 - 38
1,2,4-Trichlorobenzene	90	83	8	44 - 142	0 - 28
4-Chloro-3-methylphenol	31	37	16	23 - 97	0 - 42
Acenaphthene	103	102	1	46 - 118	0 - 31
2,4-Dinitrotoluene	79	84	6	24 - 96	0 - 38
4-Nitrophenol	45	42	7	10 - 80	0 - 50
Pentachlorophenol	59	53	12	9 - 103	0 - 50
Pyrene	106	102	3	26 - 127	0 - 31

## Analytical Services Inc. Batch QC

Surrogate Recovery

Base Neutrals / Acids

Matrix : Aqueous

Batch # 32128

Method : EPA 8270

## % Recovery Objectives

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S1	2-Fluorophenol	21 - 100
S2	Phenol-d5	10 - 94
S3	Nitrobenzene-d5	35 - 114
S4	2-Fluorobiphenyl	43 - 116
S5	2,4,6-Tribromophenol	10 - 123
S6	Terphenyl-d14	33 - 141

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Sample	File	S1	S2	S3	S4	S5	S6
<hr/>							
32128BLK	A6522	41	34	70	105	70	128
32128LCS	A6523	43	36	80	109	71	136
32128LCSD	A6524	40	32	60	83	70	93
86126-1	A6528	38	30	75	115	58	149
86126-2	A6529	35	29	80	112	57	149
86126-3	A6530	24	20	79	115	64	149
86126-4	A6531	10	6	76	108	26	122
^^Note: MATRIX EFFECT							
86126-5MS	A6532	18	19	81	108	49	150
^^Note: MATRIX EFFECT							
86126-5MSD	A6533	19	20	80	105	51	151
^^Note: MATRIX EFFECT							
86126-7	A6534	38	34	80	111	65	121
86126-8	A6535	40	31	79	114	73	133
86126-9	A6536	39	30	71	109	69	137
86126-11	A6537	33	17	155	98	101	121
^^Note: MATRIX EFFECT							
86126-12	A6538	40	34	75	106	69	97
86126-13	A6539	41	36	78	112	66	125
86126-14DUP	A6540	47	40	83	118	86	134
86126-7RR	B0216	39	22	53	68	56	68
86126-8RR	B0217	43	27	64	76	41	103
86126-11RR	B0218	14	19	75	80	18	59
86126-12RR	B0219	49	30	59	76	62	78

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Sample Batch Information  
Base Neutrals / Acids Method : EPA 8270

Sample ID	Preparation			Preparation Notes	Analysis			Inst #
	Date	Time	By		Date	Time	By	
86126-1	08/21/97	0900	JH/TB		08/23/97	1615	TAS	5970
86126-11	08/21/97	0900	JH/TB		08/23/97	2126	TAS	5970
86126-12	08/21/97	0900	JH/TB		08/23/97	2200	TAS	5970
86126-13	08/21/97	1145	TB		08/23/97	2235	TAS	5970
86126-14DUP	08/21/97	1145	TB		08/23/97	2309	TAS	5970
86126-2	08/21/97	0900	JH/TB		08/23/97	1649	TAS	5970
86126-3	08/21/97	0900	JH/TB		08/23/97	1724	TAS	5970
86126-4	08/21/97	0900	JH/TB		08/23/97	1758	TAS	5970
86126-5MS	08/21/97	0900	JH/TB		08/23/97	1832	TAS	5970
86126-7	08/21/97	0900	JH/TB		08/23/97	1942	TAS	5970
86126-8	08/21/97	0900	JH/TB		08/23/97	2017	TAS	5970
86126-9	08/21/97	0900	JH/TB		08/23/97	2052	TAS	5970
32128BLK	08/21/97	0900	JH/TB		08/23/97	1249	TAS	5970
32128LCS	08/21/97	0900	JH/TB		08/23/97	1323	TAS	5970
32128LCSD	08/21/97	0900	JH/TB		08/23/97	1358	TAS	5970
86126-5MSD	08/21/97	0900	JH/TB		08/23/97	1907	TAS	5970
86126-7RR	08/26/97	0800	TB		08/27/97	1953	DMB	5971
86126-8RR	08/26/97	0800	TB		08/27/97	2027	DMB	5971
86126-11RR	08/26/97	0800	TB		08/27/97	2101	DMB	5971
86126-12RR	08/26/97	0800	TB		08/27/97	2135	DMB	5971

Analytical Services Inc. Batch QC  
For Report Number :86126  
Volatile Organics

Matrix : Aqueous

Batch # 32492

Method : EPA 8260

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	113	110	3	61 - 145	0 - 14
Trichloroethene	103	104	1	71 - 120	0 - 14
Benzene	116	117	1	76 - 127	0 - 11
Toluene	106	108	2	76 - 125	0 - 13
Chlorobenzene	105	103	2	75 - 130	0 - 13

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	95	93	2	61 - 145	0 - 14
Trichloroethene	91	93	2	71 - 120	0 - 14
Benzene	99	101	1	76 - 127	0 - 11
Toluene	98	100	2	76 - 125	0 - 13
Chlorobenzene	99	102	3	75 - 130	0 - 13

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Aqueous

Batch # 32492

Method : EPA 8260

## % Recovery Objectives

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S1	1,2-Dichloroethane-d4	76 - 114
S2	Toluene-d8	88 - 110
S3	Ethylbenzene-d10	75 - 115
S4	4-Bromofluorobenzene	86 - 115

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Sample	File	S1	S2	S3	S4	S5	S6
32492BLK1A	>LI180	90	89	92	95		
^^Note: 86126-16							
86126-1	>LI187	90	88	89	91		
86126-2	>LI188	89	89	91	93		
86126-3	>LI189	92	91	93	91		
86126-4	>LI190	92	88	91	93		
86126-4MS	>LI194	89	88	91	91		
^^Note: 86126-5							
86126-4MSD	>LI195	93	91	92	94		
^^Note: 86126-5DUP							
86126-6	>LI196	90	92	94	93		
86126-7	>LI197	89	89	92	95		
86126-8	>LI197	91	89	90	94		
86126-9	>LI199	90	89	92	93		
86126-10	>LI200	89	90	94	94		
86126-11	>LI201	91	91	93	92		
86126-12	>LI202	95	89	90	95		
86126-13	>LI203	96	87	90	94		
86126-14	>LI204	95	89	93	93		
32492BLK2A	>RK466	101	101	106	98		
32492LCS	>RK475	110	99	101	98		
32492LCSD	>RK476	103	99	102	98		
32492BLK2B	>TM046	108	106	101	107		
86173-19RA	>TM052	112	102	99	105		
^^Note: RA AT LESSER DIL							
86173-15RA	>TM053	113	102	98	106		
^^Note: RA AT DIL							
86126-13RA	>TM056	112	102	101	105		
^^Note: RA FOR SURR							
32492BLK2C	>TM059	109	107	104	103		
86235-13	>TM062	114	105	102	109		

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Sample Batch Information  
Volatile Organics Method : EPA 8260

Sample ID	Preparation			Preparation Notes	Analysis			Inst #
	Date	Time	By		Date	Time	By	
32492BLK1A	/	/			08/29/97	1245	JKP	VOA1
86126-1	/	/			08/29/97	1833	JKP	VOA1
86126-2	/	/			08/29/97	1908	JKP	VOA1
86126-3	/	/			08/29/97	1943	JKP	VOA1
86126-4	/	/			08/29/97	2018	JKP	VOA1
86126-4MS	/	/			08/29/97	2127	JKP	VOA1
86126-4MSD	/	/			08/29/97	2202	JKP	VOA1
86126-6	/	/			08/29/97	2237	JKP	VOA1
86126-7	/	/			08/29/97	2312	JKP	VOA1
86126-8	/	/			08/29/97	2347	JKP	VOA1
86126-9	/	/			08/30/97	0022	JKP	VOA1
86126-10	/	/			08/30/97	0056	JKP	VOA1
86126-11	/	/			08/30/97	0131	JKP	VOA1
86126-12	/	/			08/30/97	0206	JKP	VOA1
86126-13	/	/			08/30/97	0241	JKP	VOA1
86126-14	/	/			08/30/97	0317	JKP	VOA1
32492BLK2A	/	/			08/29/97	1113	JKP	VOA2
32492LCS	/	/			08/29/97	1840	JKP	VOA2
32492LCSD	/	/			08/29/97	1914	JKP	VOA2
32492BLK2B	/	/			09/01/97	1638	JKP	VOA2
86173-19RA	/	/			09/02/97	0101	JKP	VOA2
86173-15RA	/	/			09/02/97	0135	JKP	VOA2
86126-13RA	/	/			09/02/97	0316	JKP	VOA2
32492BLK2C	/	/			09/02/97	1027	JKP	VOA2
86235-13	/	/			09/02/97	1208	JKP	VOA2

Analytical Services Inc. Batch QC  
For Report Number :86126

## QC Batch General Information

Batch Number	Analyte	Analysis Method	Matrix	Blank Result	Prep. Method
32048	Hg	EPA 7470	Aqueous <	0.0002	
32049	Hg	EPA 7470	Aqueous <	0.0002	
32159	Se	EPA 7740	Aqueous <	0.0050	
32159	Tl	EPA 7841	Aqueous <	0.0020	
32159	As	EPA 7060	Aqueous <	0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
32160	Se	EPA 7740	Aqueous <	0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
32160	Tl	EPA 7841	Aqueous <	0.0020	
32160	As	EPA 7060	Aqueous <	0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
32162	Ag	EPA 6010	Aqueous <	0.0009	
32162	Ba	EPA 6010	Aqueous <	0.0010	
32162	Be	EPA 6010	Aqueous <	0.0004	
32162	Cd	EPA 6010	Aqueous <	0.0010	
32162	Cr	EPA 6010	Aqueous <	0.0010	
32162	Cu	EPA 6010	Aqueous <	0.0100	
32162	Ni	EPA 6010	Aqueous <	0.0020	
^^Note : QC PASSES ON LCS,LCSD,PDS					
32162	Pb	EPA 6010	Aqueous <	0.0040	
32162	Sb	EPA 6010	Aqueous <	0.0060	
32162	Zn	EPA 6010	Aqueous <	0.0080	
^^Note : QC PASSES ON LCS,LCSD,PDS					
32413	CN	EPA 9010	Aq/Solid <	0.0200	

## Lab Control Information

Batch Number	Analyte	Method	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
32048	Hg	EPA 7470	100	96	4	76 - 124	0 - 20
32049	Hg	EPA 7470	100	100	0	76 - 124	0 - 20
32159	Se	EPA 7740	117	123	5	76 - 124	0 - 20
32159	Tl	EPA 7841	95	99	4	76 - 124	0 - 20
32159	As	EPA 7060	77	76	1	76 - 124	0 - 20
32160	Se	EPA 7740	107	116	8	76 - 124	0 - 20
32160	Tl	EPA 7841	102	101	1	76 - 124	0 - 20
32160	As	EPA 7060	89	96	8	76 - 124	0 - 20
32162	Ag	EPA 6010	98	100	2	76 - 124	0 - 20
32162	Ba	EPA 6010	96	95	1	76 - 124	0 - 20

Analytical Services Inc. Batch QC  
For Report Number :86126

## Lab Control Information

Batch Number	Analyte	Method	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
32162	Be	EPA 6010	93	93	0	76 - 124	0 - 20
32162	Cd	EPA 6010	94	93	1	76 - 124	0 - 20
32162	Cr	EPA 6010	100	99	1	76 - 124	0 - 20
32162	Cu	EPA 6010	99	98	1	76 - 124	0 - 20
32162	Ni	EPA 6010	89	89	0	76 - 124	0 - 20
32162	Pb	EPA 6010	94	93	1	76 - 124	0 - 20
32162	Sb	EPA 6010	110	110	0	76 - 124	0 - 20
32162	Zn	EPA 6010	94	87	8	76 - 124	0 - 20
32413	CN	EPA 9010	89	102	14	85 - 115	0 - 30

## Matrix Spike Information

Batch Number	Analyte	Method	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
32048	Hg	EPA 7470	104	106	2	76 - 124	0 - 20
32049	Hg	EPA 7470	108	115	6	76 - 124	0 - 20
32159	Se	EPA 7740	77	76	1	76 - 124	0 - 20
32159	Tl	EPA 7841	93	93	0	76 - 124	0 - 20
32159	As	EPA 7060	72	68	6	76 - 124	0 - 20
32160	Se	EPA 7740	21	22	5	76 - 124	0 - 20
32160	Tl	EPA 7841	85	84	1	76 - 124	0 - 20
32160	As	EPA 7060	65	76	16	76 - 124	0 - 20
32162	Ag	EPA 6010	90	90	0	76 - 124	0 - 20
32162	Ba	EPA 6010	85	85	0	76 - 124	0 - 20
32162	Be	EPA 6010	85	85	0	76 - 124	0 - 20
32162	Cd	EPA 6010	80	80	0	76 - 124	0 - 20
32162	Cr	EPA 6010	80	80	0	76 - 124	0 - 20
32162	Cu	EPA 6010	90	90	0	76 - 124	0 - 20
32162	Ni	EPA 6010	75	75	0	76 - 124	0 - 20
32162	Pb	EPA 6010	80	80	0	76 - 124	0 - 20
32162	Sb	EPA 6010	95	95	0	76 - 124	0 - 20
32162	Zn	EPA 6010	70	70	0	76 - 124	0 - 20
32413	CN	EPA 9010	96	97	1	75 - 125	0 - 30



Analytical Services Inc. Batch QC  
For Report Number :86126

## Post Digestion Spike Information

Batch Number	Analyte	Method	PDS %Rec	%Recovery Range
32159	Se	EPA 7740	89	76 - 124
32159	Tl	EPA 7841	94	76 - 124
32159	As	EPA 7060	65	76 - 124
32160	Se	EPA 7740	128	76 - 124
32160	Tl	EPA 7841	105	76 - 124
32160	As	EPA 7060	75	76 - 124
32162	Ag	EPA 6010	100	76 - 124
32162	Ba	EPA 6010	85	76 - 124
32162	Be	EPA 6010	85	76 - 124
32162	Cd	EPA 6010	85	76 - 124
32162	Cr	EPA 6010	85	76 - 124
32162	Cu	EPA 6010	90	76 - 124
32162	Ni	EPA 6010	80	76 - 124
32162	Pb	EPA 6010	85	76 - 124
32162	Sb	EPA 6010	105	76 - 124
32162	Zn	EPA 6010	80	76 - 124

## Unspiked Sample Duplicate Information

Batch Number	Analyte	Method	Sample 1 RPD	Sample 2 RPD	RPD Range
32413	CN	EPA 9010	0	0	0 - 30

Sample Batch Information  
Analysis : Hg

Sample ID	Tag	Preparation			Preparation	Analysis			Inst
		Date	Time	By	Notes	Date	Time	By	
32048BLANK	HG	08/25/97	2022	MB		08/26/97	1200	FBS	HG1
32048LCS	HG	08/25/97	2022	MB		08/26/97	1203	FBS	HG1
32048LCSD	HG	08/25/97	2022	MB		08/26/97	1205	FBS	HG1
86159-4MS	HG	08/25/97	2022	MB		08/26/97	1207	FBS	HG1
86159-4MSD	HG	08/25/97	2022	MB		08/26/97	1210	FBS	HG1
86159-5DUP	HG	08/25/97	2022	MB		08/26/97	1212	FBS	HG1
86126-13	HG	08/25/97	2022	MB		08/26/97	1233	FBS	HG1
86126-14	HG	08/25/97	2022	MB		08/26/97	1236	FBS	HG1
86143	HG	08/25/97	2022	MB		08/26/97	1238	FBS	HG1
86150-1	HG	08/25/97	2022	MB		08/26/97	1241	FBS	HG1
86150-2	HG	08/25/97	2022	MB		08/26/97	1243	FBS	HG1
86159-1	HG	08/25/97	2022	MB		08/26/97	1219	FBS	HG1
86159-2	HG	08/25/97	2022	MB		08/26/97	1221	FBS	HG1
86159-3	HG	08/25/97	2022	MB		08/26/97	1229	FBS	HG1
86159-4	HG	08/25/97	2022	MB		08/26/97	1214	FBS	HG1
86159-5	HG	08/25/97	2022	MB		08/26/97	1217	FBS	HG1
86159-6	HG	08/25/97	2022	MB		08/26/97	1231	FBS	HG1
86161	HG	08/25/97	2022	MB		08/26/97	1245	FBS	HG1
86161-5	HG	08/25/97	2022	MB		08/26/97	1248	FBS	HG1
86161-3-2	HG	08/25/97	2022	MB		08/26/97	1250	FBS	HG1
86173-4	HG	08/25/97	2022	MB		08/26/97	1257	FBS	HG1
86173-5	HG	08/25/97	2022	MB		08/26/97	1300	FBS	HG1
86173-6	HG	08/25/97	2022	MB		08/26/97	1302	FBS	HG1
86173-7	HG	08/25/97	2022	MB		08/26/97	1304	FBS	HG1
86173-8	HG	08/25/97	2022	MB		08/26/97	1304	FBS	HG1
86198	HG	08/25/97	2022	MB		08/26/97	1309	FBS	HG1

Sample Batch Information  
Analysis : Hg

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
32049BLANK	HG	08/25/97	2000	MB		08/26/97	1019	FBS	HG1
32049LCS	HG	08/25/97	2000	MB		08/26/97	1021	FBS	HG1
32049LCSD	HG	08/25/97	2000	MB		08/26/97	1023	FBS	HG1
86126-5MS	HG	08/25/97	2000	MB	AKA 86126-4	08/26/97	1026	FBS	HG1
86126-17MSD	HG	08/25/97	2000	MB	AKA 86126-4	08/26/97	1028	FBS	HG1
86126-9DUP	HG	08/25/97	2000	MB		08/26/97	1030	FBS	HG1
86089-10	HG	08/22/97	2000	MB		08/26/97	1140	FBS	HG1
86089-11	HG	08/22/97	2000	MB		08/26/97	1106	FBS	HG1
86089-13	HG	08/22/97	2000	MB		08/26/97	1109	FBS	HG1
86089-14	HG	08/22/97	2000	MB		08/26/97	1116	FBS	HG1
86089-15	HG	08/22/97	2000	MB		08/26/97	1118	FBS	HG1
86089-16	HG	08/22/97	2000	MB		08/26/97	1121	FBS	HG1
86160-19	HG	08/22/97	2000	MB		08/26/97	1123	FBS	HG1
86160-20	HG	08/22/97	2000	MB		08/26/97	1126	FBS	HG1
86160-21	HG	08/22/97	2000	MB		08/26/97	1128	FBS	HG1
86111-1	HG	08/22/97	2000	MB		08/26/97	1130	FBS	HG1
86126-1	HG	08/22/97	2000	MB		08/26/97	1037	FBS	HG1
86126-2	HG	08/22/97	2000	MB		08/26/97	1045	FBS	HG1
86126-3	HG	08/22/97	2000	MB		08/26/97	1047	FBS	HG1
86126-4	HG	08/22/97	2000	MB	AKA 86126-5	08/26/97	1049	FBS	HG1
86126-5	HG	08/22/97	2000	MB	AKA 86126-4	08/26/97	1033	FBS	HG1
86126-7	HG	08/22/97	2000	MB		08/26/97	1052	FBS	HG1
86126-8	HG	08/22/97	2000	MB		08/26/97	1054	FBS	HG1
86126-9	HG	08/22/97	2000	MB		08/26/97	1035	FBS	HG1
86126-11	HG	08/22/97	2000	MB		08/26/97	1057	FBS	HG1
86126-12	HG	08/22/97	2000	MB		08/26/97	1059	FBS	HG1

Sample Batch Information  
Analysis : Se, Tl, As

Sample ID	Tag	Preparation			Preparation	Analysis			Inst
		Date	Time	By	Notes	Date	Time	By	
32159BLANK	Se	08/26/97	0635	MTK		08/27/97	1054	MCW	AA1
32159LCS	Se	08/26/97	0635	MTK		08/27/97	1054	MCW	AA1
32159LCSD	Se	08/26/97	0635	MTK		08/27/97	1054	MCW	AA1
86126-11MS	Se	08/26/97	0635	MTK		08/27/97	1054	MCW	AA1
86126-11MSD	Se	08/26/97	0635	MTK		08/27/97	1054	MCW	AA1
86126-14PDS	Se	08/26/97	0635	MTK		08/27/97	1054	MCW	AA1
86126-14DUP	Se	08/26/97	0635	MTK		08/27/97	1054	MCW	AA1
85938-10RR	Se	08/26/97	0635	MTK	85938-3D/D	08/27/97	1054	MCW	AA1
85938-13RR	Se	08/26/97	0635	MTK	85938-4	08/27/97	1054	MCW	AA1
85938-14RR	Se	08/26/97	0635	MTK	85938-4D/D	08/27/97	1054	MCW	AA1
85938-1RR	Se	08/26/97	0635	MTK		08/27/97	1054	MCW	AA1
85938-2RR	Se	08/26/97	0635	MTK	85938-1D/D	08/27/97	1054	MCW	AA1
85938-9RR	Se	08/26/97	0635	MTK	85938-3	08/27/97	1054	MCW	AA1
86086-7	Se	08/26/97	0635	MTK		08/27/97	1054	MCW	AA1
86086-8	Se	08/26/97	0635	MTK		08/27/97	1054	MCW	AA1
86086-9	Se	08/26/97	0635	MTK		08/27/97	1054	MCW	AA1
86088	Se	08/26/97	0635	MTK		08/27/97	1054	MCW	AA1
86126-1	Se	08/26/97	0635	MTK		08/27/97	1054	MCW	AA1
86126-11	Se	08/26/97	0635	MTK		08/27/97	1054	MCW	AA1
86126-12	Se	08/26/97	0635	MTK		08/27/97	1054	MCW	AA1
86126-13	Se	08/26/97	0635	MTK		08/27/97	1054	MCW	AA1
86126-14	Se	08/26/97	0635	MTK		08/27/97	1054	MCW	AA1
86126-2	Se	08/26/97	0635	MTK		08/27/97	1054	MCW	AA1
86086-7	Se	08/26/97	0635	MTK	D/D	08/27/97	1054	MCW	AA1
86086-8	Se	08/26/97	0635	MTK	D/D	08/27/97	1054	MCW	AA1
86086-9	Se	08/26/97	0635	MTK	D/D	08/27/97	1054	MCW	AA1
86088	Se	08/26/97	0635	MTK	D/D	08/27/97	1054	MCW	AA1
32159BLANK	As	08/26/97	0635	MTK		08/27/97	1335	MCW	AA1
32159LCS	As	08/26/97	0635	MTK		08/27/97	1335	MCW	AA1
32159LCSD	As	08/26/97	0635	MTK		08/27/97	1335	MCW	AA1
86126-11MS	As	08/26/97	0635	MTK		08/27/97	1335	MCW	AA1
86126-11MSD	As	08/26/97	0635	MTK		08/27/97	1335	MCW	AA1
86126-14PDS	As	08/26/97	0635	MTK		08/27/97	1335	MCW	AA1
86126-14DUP	As	08/26/97	0635	MTK		08/27/97	1335	MCW	AA1
85938-10RR	As	08/26/97	0635	MTK	85938-3D/D	08/27/97	1335	MCW	AA1
85938-13RR	As	08/26/97	0635	MTK	85938-4	08/27/97	1335	MCW	AA1
85938-14RR	As	08/26/97	0635	MTK	85938-4D/D	08/27/97	1335	MCW	AA1
85938-1RR	As	08/26/97	0635	MTK		08/27/97	1335	MCW	AA1
85938-2RR	As	08/26/97	0635	MTK	85938-1D/D	08/27/97	1335	MCW	AA1
85938-9RR	As	08/26/97	0635	MTK	85938-3	08/27/97	1335	MCW	AA1
86086-7	As	08/26/97	0635	MTK		08/27/97	1335	MCW	AA1
86086-8	As	08/26/97	0635	MTK		08/27/97	1335	MCW	AA1
86126-9	As	08/26/97	0635	MTK		08/27/97	1335	MCW	AA1
86126-3	As	08/26/97	0635	MTK		08/27/97	1335	MCW	AA1
86126-1	As	08/26/97	0635	MTK		08/27/97	1335	MCW	AA1
86126-11	As	08/26/97	0635	MTK		08/27/97	1335	MCW	AA1
86126-12	As	08/26/97	0635	MTK		08/27/97	1335	MCW	AA1
86126-13	As	08/26/97	0635	MTK		08/27/97	1335	MCW	AA1

Sample Batch Information  
Analysis : Se, Tl, As

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
86126-14	As	08/26/97	0635	MTK		08/27/97	1335	MCW	AA1
86126-2	As	08/26/97	0635	MTK		08/27/97	1335	MCW	AA1
86086-7	As	08/26/97	0635	MTK	D/D	08/27/97	1335	MCW	AA1
86086-8	As	08/26/97	0635	MTK	D/D	08/27/97	1335	MCW	AA1
86086-9	As	08/26/97	0635	MTK	D/D	08/27/97	1335	MCW	AA1
86088	As	08/26/97	0635	MTK	D/D	08/27/97	1335	MCW	AA1
32159BLANK	Tl	08/26/97	0635	MTK		08/28/97	1345	MCW	AA2
32159LCS	Tl	08/26/97	0635	MTK		08/28/97	1351	MCW	AA2
32159LCSD	Tl	08/26/97	0635	MTK		08/28/97	1357	MCW	AA2
86126-11MS	Tl	08/26/97	0635	MTK		08/28/97	1403	MCW	AA2
86126-11MSD	Tl	08/26/97	0635	MTK		08/28/97	1410	MCW	AA2
86126-14PDS	Tl	08/26/97	0635	MTK		08/28/97	1416	MCW	AA2
86126-14DUP	Tl	08/26/97	0635	MTK		08/28/97	1422	MCW	AA2
86126-1	Tl	08/26/97	0635	MTK		08/28/97	1428	MCW	AA2
86126-11	Tl	08/26/97	0635	MTK		08/28/97	1434	MCW	AA2
86126-12	Tl	08/26/97	0635	MTK		08/28/97	1453	MCW	AA2
86126-13	Tl	08/26/97	0635	MTK		08/28/97	1459	MCW	AA2
86126-14	Tl	08/26/97	0635	MTK		08/28/97	1505	MCW	AA2
86126-2	Tl	08/26/97	0635	MTK		08/28/97	1511	MCW	AA2

Sample Batch Information  
Analysis : Se, Tl, As

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
32160BLANK	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
32160LCS	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
32160LCSD	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86126-5MS	Se	08/26/97	0600	MTK	AKA 86126-4	08/28/97	1341	MCW	AA1
86126-17MSD	Se	08/26/97	0600	MTK	AKA 86126-4	08/28/97	1341	MCW	AA1
86126-9PDS	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86126-9DUP	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86126-3	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86126-4	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86126-5	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86126-7	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86126-8	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86126-9	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86150-1	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86150-2	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86173-11	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86173-12	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86173-13	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86173-14	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86173-15	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86173-17	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86173-18	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86173-19	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86173-2	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86173-4	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86173-5	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
32160BLANK	Tl	08/26/97	0600	MTK		08/28/97	1626	MCW	AA2
32160LCS	Tl	08/26/97	0600	MTK		08/28/97	1632	MCW	AA2
32160LCSD	Tl	08/26/97	0600	MTK		08/28/97	1639	MCW	AA2
86126-5MS	Tl	08/26/97	0600	MTK	AKA 86126-4	08/28/97	1645	MCW	AA2
86126-17MSD	Tl	08/26/97	0600	MTK	AKA 86126-4	08/28/97	1654	MCW	AA2
86126-9PDS	Tl	08/26/97	0600	MTK		08/28/97	1657	MCW	AA2
86126-9DUP	Tl	08/26/97	0600	MTK		08/28/97	1704	MCW	AA2
86126-3	Tl	08/26/97	0600	MTK		08/28/97	1710	MCW	AA2
86126-4	Tl	08/26/97	0600	MTK		08/28/97	1716	MCW	AA2
86126-5	Tl	08/26/97	0600	MTK		08/28/97	1735	MCW	AA2
86126-7	Tl	08/26/97	0600	MTK		08/28/97	1741	MCW	AA2
86126-8	Tl	08/26/97	0600	MTK		08/28/97	1747	MCW	AA2
86126-9	Tl	08/26/97	0600	MTK		08/28/97	1753	MCW	AA2
86150-1	Tl	08/26/97	0600	MTK		08/28/97	1759	MCW	AA2
86150-2	Tl	08/26/97	0600	MTK		08/28/97	1805	MCW	AA2
86173-11	Tl	08/26/97	0600	MTK		08/28/97	1811	MCW	AA2
86173-12	Tl	08/26/97	0600	MTK		08/28/97	1818	MCW	AA2
86173-13	Tl	08/26/97	0600	MTK		08/28/97	1824	MCW	AA2
86173-14	Tl	08/26/97	0600	MTK		08/28/97	1842	MCW	AA2
86173-15	Tl	08/26/97	0600	MTK		08/28/97	1848	MCW	AA2
86173-17	Tl	08/26/97	0600	MTK		08/28/97	1854	MCW	AA2
86173-18	Tl	08/26/97	0600	MTK		08/28/97	1900	MCW	AA2

Sample Batch Information  
Analysis : Se, Tl, As

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
86173-19	Tl	08/26/97	0600	MTK		08/28/97	1906	MCW	AA2
86173-2	Tl	08/26/97	0600	MTK		08/28/97	1913	MCW	AA2
86173-4	Tl	08/26/97	0600	MTK		08/28/97	1919	MCW	AA2
86173-5	Tl	08/26/97	0600	MTK		08/28/97	1938	MCW	AA2
32160BLANK	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
32160LCS	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
32160LCSD	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86126-5MS	As	08/26/97	0600	MTK	AKA 86126-4	09/02/97	1621	MCW	AA1
86126-17MSD	As	08/26/97	0600	MTK	AKA 86126-4	09/02/97	1621	MCW	AA1
86126-9PDS	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86126-9DUP	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86126-3	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86126-4	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86126-5	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86126-7	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86126-8	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86126-9	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86150-1	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86150-2	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86173-11	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86173-12	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86173-13	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86173-14	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86173-15	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86173-17	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86173-18	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86173-19	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86173-2	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86173-4	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86173-5	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1

Sample Batch Information  
Analysis : Ag, Ba, Be, Cd, Cr, Cu, Ni, Pb, Sb, Zn

Sample ID	Preparation				Preparation Notes	Analysis				Inst
	Tag	Date	Time	By		Date	Time	By		
32162BLANK		08/26/97	0650	CJC	TRACE	08/28/97	0944	MLR	ICP2	
32162LCS		08/26/97	0650	CJC	TRACE	08/28/97	0947	MLR	ICP2	
32162LCSD		08/26/97	0650	CJC	TRACE	08/28/97	0950	MLR	ICP2	
86126-5MS		08/26/97	0650	CJC	AKA 86126-4	08/28/97	0953	MLR	ICP2	
86126-17MSD		08/26/97	0650	CJC	AKA 86126-4	08/28/97	0956	MLR	ICP2	
86126-5PDS		08/26/97	0650	CJC	TRACE	08/28/97	0959	MLR	ICP2	
86126-5DUP		08/26/97	0650	CJC	TRACE	08/28/97	1002	MLR	ICP2	
86089-9		08/26/97	0650	CJC	TRACE	08/28/97	1010	MLR	ICP2	
86126-1		08/26/97	0650	CJC	TRACE	08/28/97	1019	MLR	ICP2	
86126-11		08/26/97	0650	CJC	TRACE	08/28/97	1022	MLR	ICP2	
86126-12		08/26/97	0650	CJC	TRACE	08/28/97	1025	MLR	ICP2	
86126-13		08/26/97	0650	CJC	TRACE	08/28/97	1028	MLR	ICP2	
86126-14		08/26/97	0650	CJC	TRACE	08/28/97	1031	MLR	ICP2	
86126-2		08/26/97	0650	CJC	TRACE	08/28/97	1034	MLR	ICP2	
86126-3		08/26/97	0650	CJC	TRACE	08/28/97	1037	MLR	ICP2	
86126-4		08/26/97	0650	CJC	TRACE	08/28/97	1040	MLR	ICP2	
86126-5		08/26/97	0650	CJC	TRACE	08/28/97	1005	MLR	ICP2	
86126-7		08/26/97	0650	CJC	TRACE	08/28/97	1043	MLR	ICP2	
86126-8		08/26/97	0650	CJC	TRACE	08/28/97	1046	MLR	ICP2	
86126-9		08/26/97	0650	CJC	TRACE	08/28/97	1055	MLR	ICP2	
86159-1		08/26/97	0650	CJC	TRACE	08/28/97	1058	MLR	ICP2	
86159-2		08/26/97	0650	CJC	TRACE	08/28/97	1008	MLR	ICP2	
86159-3		08/26/97	0650	CJC	TRACE	08/28/97	1101	MLR	ICP2	
86159-4		08/26/97	0650	CJC	TRACE	08/28/97	1104	MLR	ICP2	
86159-5		08/26/97	0650	CJC	TRACE	08/28/97	1107	MLR	ICP2	
86159-6		08/26/97	0650	CJC	TRACE	08/28/97	1110	MLR	ICP2	
86160-1		08/26/97	0650	CJC	TRACE	08/28/97	1113	MLR	ICP2	



Sample Batch Information  
Analysis : CN

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
32413BLK		08/26/97	0835	ARS	MIDI-DIST	08/26/97	1140	ARS	GENE5
32413LCS		08/26/97	0835	ARS	MIDI-DIST	08/26/97	1140	ARS	GENE5
32413LCSD		08/26/97	0835	ARS	MIDI-DIST	08/26/97	1140	ARS	GENE5
86126-4MS		08/26/97	0835	ARS	AKA 86126-5D	08/26/97	1140	ARS	GENE5
86126-4MSD		08/26/97	0835	ARS	AKA 86126-5D	08/26/97	1140	ARS	GENE5
86126-1		08/26/97	0835	ARS	MIDI-DIST	08/26/97	1140	ARS	GENE5
86126-2		08/26/97	0835	ARS	MIDI-DIST	08/26/97	1140	ARS	GENE5
86126-3		08/26/97	0835	ARS	MIDI-DIST	08/26/97	1140	ARS	GENE5
86126-4		08/26/97	0835	ARS	MIDI-DIST	08/26/97	1140	ARS	GENE5
86126-7		08/26/97	0835	ARS	MIDI-DIST	08/26/97	1140	ARS	GENE5
86126-8		08/26/97	1100	ARS	MIDI-DIST	08/26/97	1410	ARS	GENE5
32413CAL5		08/26/97	1100	ARS	MIDI-DIST	08/26/97	1410	ARS	GENE5
32413CAL15		08/26/97	1100	ARS	MIDI-DIST	08/26/97	1410	ARS	GENE5
86126-9		08/26/97	1100	ARS	MIDI-DIST	08/26/97	1410	ARS	GENE5
86126-11		08/26/97	1100	ARS	MIDI-DIST	08/26/97	1410	ARS	GENE5
86126-12		08/26/97	1100	ARS	MIDI-DIST	08/26/97	1410	ARS	GENE5
86126-13		08/26/97	1100	ARS	MIDI-DIST	08/26/97	1410	ARS	GENE5
86126-14		08/26/97	1100	ARS	MIDI-DIST	08/26/97	1410	ARS	GENE5
86173-1		08/26/97	1100	ARS	MIDI-DIST	08/26/97	1410	ARS	GENE5
86173-2		08/26/97	1100	ARS	MIDI-DIST	08/26/97	1410	ARS	GENE5
86173-4		08/26/97	1310	ARS	MIDI-DIST	08/26/97	1620	ARS	GENE5
86173-4DUP		08/26/97	1310	ARS	MIDI-DIST	08/26/97	1620	ARS	GENE5
86173-5		08/26/97	1310	ARS	MIDI-DIST	08/26/97	1620	ARS	GENE5
86173-5DUP		08/26/97	1310	ARS	MIDI-DIST	08/26/97	1620	ARS	GENE5
86173-6		08/26/97	1310	ARS	MIDI-DIST	08/26/97	1620	ARS	GENE5
86173-7		08/26/97	1310	ARS	MIDI-DIST	08/26/97	1620	ARS	GENE5
86173-8		08/26/97	1310	ARS	MIDI-DIST	08/26/97	1620	ARS	GENE5
86173-9		08/26/97	1310	ARS	MIDI-DIST	08/26/97	1620	ARS	GENE5
86173-11		08/26/97	1310	ARS	MIDI-DIST	08/26/97	1620	ARS	GENE5

Project Number TF0320.015  
Project Location Sloss Industries  
Laboratory ASI  
Sampler(s)/Affiliation DP: JH  
G.M

SAMPLE IDENTITY				SAMPLE BOTTLE / CONTAINER DESCRIPTION										TOTAL
Code	Date/Time Sampled	Lab ID		1 L Amber Glass Vials (8270)	40 mL Glass Vial	VOC: (8260) HCL	Cyanide (9010) NaOH	PAN: Barium (6010) HNO <sub>3</sub>	Mercury (7470) HNO <sub>3</sub>					
170818-LD-23-GW0022	L 8/18/97 1205			2	3	1	1	1						8
170818-LD-23-GW0023	L 8/18/97 1400			2	3	1	1	1						8
170818-LD-23-GW0023	L 8/18/97 1655				3					sample time = 16:45 per cent.				3
170818-LD-23-GW0024	L 8/18/97 1850				3									3
170818-LD-23-GW0024	L 8/18/97 1850				3									3
170818-LD-23-T00002	L 8/18/97 1905				3									3

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/  
Containers

28

Relinquished by: <u>[Signature]</u>	Organization: <u>ASI</u>	Date: <u>8/19/97</u> Time: <u>0:30</u>	Seal Intact? Yes No N/A
Received by: <u>[Signature]</u>	Organization: <u>ASI</u>	Date: <u>8/19/97</u> Time: <u>0:30</u>	Yes No N/A
Relinquished by: <u>[Signature]</u>	Organization: <u>ASI</u>	Date: <u>8/20/97</u> Time: <u>1300</u>	Seal Intact? Yes No N/A
Received by: <u>[Signature]</u>	Organization: <u>ASI</u>	Date: <u>8/20/97</u> Time: <u>1300</u>	Yes No N/A

Special Instructions/Remarks:

DIRECT ANSWER ALL QUESTIONS TO KATHY THALMAN AT 813 961 1921

ASI COOLER #408

ice, no seal, temp = 9C, pH = 1 (metals)

Delivery Method: ☐ In Person ☐ Common Carrier

☒ Lab Courier

☐ Other

SPECIFY

SPECIFY



10

SPECIFY Southpoint 95-0533

Project Number TF0320.015

Project Location Sloss Industries

Laboratory ASI

Sampler(s)/Affiliation DP: JH

Gem

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID
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LI-23-GW0024 <sup>MS</sup> Mid L	8/18/97	1850
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LD-23-F8002 48/9/92 B5D

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Sample Code: L = Liquid; S = Solid; A =

Relinquished by: [Signature]

Received by: [Signature]

Relinquished by: [Signature]

Received by: Hubert Ward

Special Instructions/Remarks: DIRECT AND

AKI Com 120 #112

\_\_\_\_\_

Deliver Method: ☒ In Person

SAMPLE BOTTLE / CONTAINER DESCRIPTION

1L Amber Glass	
SVOC (8270)	
40mL glass vial	
VOC (8260)	
1L plastic 500mL	
Granide (9010) NaOH	
500mL Glass, Wm	
Mercury (7470) HNO <sub>3</sub>	
PMMA plastic Wm	
PMMA (6010) HNO <sub>3</sub>	
TOTAL	

TOTAL

5

5

19

Total No. of Bottles/  
Containers

10

Relinquished by: [Signature] Organization: FSN (TAMPA) Date 8/19/97 Time \_\_\_\_\_ Seal Intact?  
Received by: [Signature] Organization: AST Date 8/19/97 Time 6:30 Yes No N/A

Relinquished by: [Signature] Organization: SEI Date: 1/1 Time: 1300 Seal Intact?  
Received by: [Signature] Organization: SEI Date: 8/20/19 Time: 1300 Yes (NO) N/A

Special Instructions/Remarks: ice, no seal, temp = 50 pH = 1 (metals), 12 (CN)  
DIRECT ANY/all QUESTIONS TO KATHY THALMAN AT 813 961 1921

Delivery Method: ☐ In Person ☐ Common Carrier ☒ Lab Courier ☐ Other

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Project Number TF0320 .015

Project Location Sloss Industries

Laboratory ASI

Sampler(s)/Affiliation DP: JH  
Gim

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID
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SAMPLE BOTTLE / CONTAINER DESCRIPTION

၁၉၂၇

0819

[illegible]

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/  
Containers

10

Relinquished by: <u>[Signature]</u>	Organization: <u>GIM (Tampa)</u>	Date: <u>8/19/97</u> Time: _____	Seal Intact?
Received by: <u>[Signature]</u>	Organization: <u>8-19-97 6:30</u>	Date: <u>1/1</u> Time: _____	Yes No N/A
Relinquished by: <u>[Signature]</u>	Organization: _____	Date: <u>1/1</u> Time: _____	Seal Intact?
Received by: <u>[Signature]</u>	Organization: <u>ASI</u>	Date: <u>1/1</u> Time: _____	Yes No N/A

Special Instructions/Remarks:

DIRECT ANY ALL QUESTIONS TO KATHY THALMAN AT 0139611921

Asl correct 210 ice, no seal, temp = 5C, pH = 1 (mclab's) 12 (cu)

Delivery Method: ☐ In Person ☐ Common Carrier ☒ Lab Courier ☐ Other \_\_\_\_\_

# SLOSS INDUSTRIES

## DATA VALIDATION CHECKLIST

PROJECT NAME  
PROJECT NUMBER  
SAMPLE  
IDENTIFICATION(S)

Sloss Industries					
TF320.015					
970820-LD-38-GW0026		970820-LD-39-GW0033		970821-LD-38-GW0030S a	
970819-LD-38-GW0027		970821-LD-39-GW0036		970821-LD-38-GW0030D	
970819-LD-38-TB0004		970821-LD-38-TB0005		970821-LD-39-GW0034D	
970820-LD-39-FB0004		970821-LD-38-GW0037		970821-LD-38-GW0026	
970820-LD-39-EB0004		970821-LD-39-GW0035			8 kr 12/18/97
970820-LD-39-GW0034S		970821-LD-39-GW0031			
970820-LD-39-GW9034S		970821-LD-39-GW0032			
(a) Additional sample collected for MS/MSD					
August 19 through 21, 1997					
Joe Hughes and David Page					
Groundwater					
Analytical Services, Inc.					
Cyanide (9010), PPT Metals, 8260, 8270					
Geraghty & Miller, Inc./Level II					
86173					
October 16, 1997					

SAMPLE DATE (S)  
SAMPLE TEAM  
SAMPLE MATRIX  
ANALYZING LABORATORY  
ANALYSES REQUESTED  
QA REPORTING LEVEL  
LABORATORY REPORT NO.  
VALIDATION DATE

## FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: *	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Sampling dates noted		X		X	
2. Sampling team indicated		X		X	
3. Sampling identification traceable to location collected		X		X	
4. Sample location		X		X	
5. Sample depth for soils		X		X	
6. Collection technique (bailer, pump, etc.)		X		X	
7. Field sample preparation techniques		X		X	
8. Sample type (grab, composite)		X		X	
9. Sample container type		X		X	
10. Preservation methods		X		X	
11. Chain-of-custody form completed		X		X	
12. Required analytical methods requested		X		X	
13. Field (water and soil) sample logs completed properly and signed		X		X	
14. Number and type of field QC samples collected (blanks, replicates, splits, etc.)		X		X <sup>(1)</sup>	
15. Field equipment calibration		X		X	
16. Field equipment decontamination		X		X	
17. Sample shipping		X		X	
18. Laboratory task order		X		X	

\* Field sampling logs = water and/or soil/sediment sampling logs



## FIELD DATA PACKAGE DOCUMENTATION

### COMMENTS:

1) Field QC samples collected

Field Duplicate Pair      970820-LD-39-GW0034S and 970820-LD-39-GW9034S

MS/MSD                      970821-LD-38-GW0030S

Blanks                      970819-LD-38-TB0004    Trip Blank  
                                  970820-LD-39-FB0004    Field Blank  
                                  970820-LD-39-EB0004    Equipment Blank  
                                  970821-LD-38-TB0005    Trip Blank

Slit with Guardian:      970820-LD-39-GW0034S Reviewed under separate cover.

## ANALYTICAL DATA PACKAGE DOCUMENTATION GENERAL INFORMATION

ALL QA REPORTING LEVELS:	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Method of analysis		X		X	
4. Detection limits of analysis		X		X	
5. Master tracking list		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preparation/extraction date		X		X	
9. Sample analysis date		X		X	
10. Copy of chain-of-custody form signed by lab sample custodian		X		X	
11. Narrative summary of QA or sample problems provided		X		X	

QA - quality assurance

COMMENTS : No qualification was necessary.

All analytical data were reported as Geraghty & Miller Level II data deliverables

**INORGANIC ANALYSES  
TOTAL METALS METHODS**

QA REPORTING LEVEL II REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Holding times		X		X	
2. Detection limits		X		X	
3. Calibration curve standards	X				X
4. Initial calibration verification %R	X				X
5. Continuing calibration verification %R	X				X
6. Blanks					
A. Preparation and calibration blanks		X		X	
B. Equipment rinsate blanks		X		X	
C. Field blanks		X		X	
7. Interference check sample %R (ICP only)	X				X
8. Dilution check sample %R (ICP only)	X				X
9. Laboratory control sample %R		X		X	
10. Matrix spike %R		X		X	
11. Lab duplicate or MSD %R and RPD		X		X	
12. LCS duplicate %R and RPD		X		X	
13. Post-digestion analytical spike (FAA only)		X		X	
14. Field duplicate comparison		X		X	
15. Total and dissolved metals comparison	X				X

%R - percent recovery

RPD - relative percent difference

MSD - matrix spike duplicate

ICP - inductively coupled plasma atomic emission spectroscopy

FAA - furnace atomic absorption

NA - not applicable or not analyzed

**COMMENTS:**

This section was completed for Priority Pollutant Metals. Sloss groundwater data were qualified for each of the corresponding analytical batches where MS/MSD and PDS recoveries did not meet the control limit criteria. All qualified soil analytical results are summarized in the attached Table.

Analytical Batch	Analyte
32160	Arsenic, Selenium
32173	Selenium

**INORGANIC ANALYSES  
WET CHEMISTRY METHODS**

QA REPORTING LEVEL II REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
1. Holding times		X		X	
2. Detection limits		X		X	
3. Calibration curve standards	X				X
4. Initial calibration verification %R	X				X
5. Continuing calibration verification %R	X				X
6. Blanks					
A. Preparation and calibration blanks		X		X	
B. Equipment rinsate blanks		X		X	
C. Field blanks		X		X	
7. Laboratory control sample %R		X		X	
8. Matrix spike %R		X		X	
9. Lab duplicate or MSD %R and RPD		X		X	
10. LCS duplicate %R and RPD		X		X	
11. Field duplicate comparison	X				X

%R - percent recovery

LCS - laboratory control sample duplicate

RPD - relative percent difference

NA - not applicable or not analyzed

MSD - matrix spike duplicate

**COMMENTS:**

This section was completed for cyanide data. Performance was acceptable. No sample qualification was necessary.

**ORGANIC ANALYSES  
VOLATILE ORGANIC COMPOUNDS**

QA REPORTING LEVEL II - REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
<b>GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)</b>					
1. Holding times		X		X	
2. Detection limits		X		X	
3. Blanks					
A. Water blanks (VOCs)		X		X	
B. Equipment rinsate blanks		X		X	
C. Field Blanks		X		X	
D. Trip blanks		X		X	
4. Instrument tune and performance check	X				X
5. Initial calibration RRFs and %RSDs	X				X
6. Continuing calibration RRFs and %Ds	X				X
7. Matrix spike (MS) %R		X		X	
8. Matrix spike duplicate (MSD) %R		X		X	
9. Sample specific lab duplicate (optional)	X				X
10. MS/MSD or lab duplicate precision (RPD)		X		X	
11. Reagent water spike (BS)		X		X	
12. Reagent water spike duplicate (BSD)		X		X	
13. BS/BSD precision (RPD)		X		X	
14. Laboratory control sample (optional)		X		X	
15. Surrogate spike recoveries		X		X	
16. Internal standard retention times and areas	X				X
17. Compound identification and quantitation					
A. Reconstructed ion chromatograms	X				X
B. Quantitation reports	X				X
18. TIC search (optional)	X				X
19. Field duplicate comparison	X				X

VOCs - volatile organic compounds

RRF - relative response factor

% RSD - percent relative standard deviation

%D - percent drift

%R - percent recovery

RPD - relative percent difference

BS - blank spike

BSD - blank spike duplicate

TIC - tentatively identified compound

COMMENTS: This section was completed for volatiles Method 8260. Performance was acceptable. No sample qualification was necessary.

**ORGANIC ANALYSES  
SEMIVOLATILE ORGANIC COMPOUNDS**

QA REPORTING LEVEL II REQUIREMENTS	REPORTED		PERFORMANCE ACCEPTABLE		NOT REQUIRED
	NO	YES	NO	YES	
<b>GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)</b>					
1. Holding times					
A. Extraction holding time		X		X	
B. Analysis holding time		X		X	
2. Detection limits		X		X	
3. Blanks					
A. Water blanks		X		X	
B. Extraction blanks		X		X	
C. Equipment rinsate blanks		X		X	
D. Field Blanks		X		X	
4. Instrument tune and performance check	X				X
5. Initial calibration RRFs and %RSDs	X				X
6. Continuing calibration RRFs and %Ds	X				X
7. Matrix spike (MS) %R		X		X	
8. Matrix spike duplicate (MSD) %R		X		X	
9. Sample specific lab duplicate (optional)	X				X
10. MS/MSD or lab duplicate precision (RPD)		X		X	
11. Laboratory control sample (LCS)		X		X	
12. LCS duplicate (LCSD)		X		X	
13. LCS/LCSD precision (RPD)		X		X	
14. Surrogate spike recoveries		X		X <sup>(1)</sup>	
15. Internal standard retention times and areas	X				X
16. Compound identification and quantitation					
A. Reconstructed ion chromatograms	X				X
B. Quantitation reports	X				X
17. TIC search (optional)	X				X
18. Field duplicate comparison	X				X

SVOCs - semivolatile organic compounds  
RRF - relative response factor  
% RSD - percent relative standard deviation

%D - percent drift  
%R - percent recovery  
RPD - relative percent difference

TIC - tentatively identified compound

COMMENTS: This section was completed for semivolatile Method 8270. Performance was acceptable. No sample qualification was necessary.

A summary of qualified analytical results associated with this data set are presented in the attached table.

VALIDATION PERFORMED BY: Cynthia Arnold

SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_

Summary of Quality Analytical Results  
for Groundwater  
ASI Data Package 86173  
Sloss Industries, Birmingham, AL

F 1 of 1

G & M Sample I.D.	Analyte	Concentration Detected	Qualifier	Reasons for Qualification
<i>ASI Laboratory Report No 86173</i>				
970819-LD-38-GW0027	Arsenic	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Selenium	BDL	UJ	MS/MSD and PDS out of control limit criteria
* 970820-LD-39-GW0034S	Selenium	BDL	UJ	MS/MSD and PDS out of control limit criteria
* 970820-LD-39-GW9034S	Selenium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970820-LD-39-GW0033	Selenium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970821-LD-39-GW0036	Selenium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970821-LD-38-GW0037	Arsenic	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Selenium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970821-LD-39-GW0035	Arsenic	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Selenium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970821-LD-39-GW0031	Arsenic	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Selenium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970821-LD-39-GW0032	Arsenic	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Selenium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970821-LD-38-GW0030S	Arsenic	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Selenium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970821-LD-38-GW0030D	Arsenic	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Selenium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970821-LD-39-GW0034D	Arsenic	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Selenium	BDL	UJ	MS/MSD and PDS out of control limit criteria
970821-LD-39-GW0026	Arsenic	BDL	UJ	MS/MSD and PDS out of control limit criteria
	Selenium	BDL	UJ	MS/MSD and PDS out of control limit criteria

12/19/97

Notes:

U - Non-detect

\* Field Duplicate

UJ - Non-detected estimated

J - Estimated

R - Rejected

10/16/97

0853





# ANALYTICAL SERVICES, INC.

ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

9/19/97

## Master List ASI #86173

Sample #	G&M ID	Analysis	Notes
86173-1	970820-LD-38-GW0026	9010, Metals, 8260, 8270	Do not run per Pedro Fierro
86173-2	970819LD-38-GW0027	9010, Metals, 8260, 8270	
86173-3	970819-LD-38-TB0004	8260	
86173-4	970820-LD-39-FB0004	9010, Metals, 8260, 8270	
86173-5	970820-LD-39-EB0004	9010, Metals, 8260, 8270	
86173-6	970820-LD-39-GW-0034S	9010, Metals, 8260, 8270	
86173-7	970820-LD-39-GW-9034S	9010, Metals, 8260, 8270	
86173-8	970820-LD-39-GW0033	9010, Metals, 8260, 8270	
86173-9	970821-LD-39-GW0036	9010, Metals, 8260, 8270	
86173-10	970821-LD-38-TB0005	8260	
86173-11	970821-LD-38-GW0037	9010, Metals, 8260, 8270	
86173-12	970821-LD-39-GW0035	9010, Metals, 8260, 8270	
86173-13	970821-LD-39-GW0031	9010, Metals, 8260, 8270	
86173-14	970821-LD-39-GW0032	9010, Metals, 8260, 8270	
86173-15	970821-LD-38-GW0030S	9010, Metals, 8260, 8270	
86173-16	970821-LD-38-GW0030SMS/MSD	9010, Metals, 8260, 8270	
86173-17	970821-LD-38-GW0030D	9010, Metals, 8260, 8270	
86173-18	970821-LD-39-GW0034D	9010, Metals, 8260, 8270	
86173-19	970821-LD-39-GW0026	9010, Metals, 8260, 8270	

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12/18/97

0855

Page 1 of 1





# ANALYTICAL SERVICES, INC.

ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

17 September, 1997

## Case Narrative Report 86173

The samples were collected on 19-21 August, 1997 and received by ASI 22 August, 1997. Conditions of sample receipt were documented on the Chain of Custody. The samples were logged into the LIMS as report 86173 for the following analyses as per client request: BNA (EPA 8270), VOA (EPA 8260), Metals (EPA 6010, 7060, 7841, 7740, 7470), and CN (EPA 9010). All holding times for sample preparation and analysis were met.

BNA analysis (EPA 8270) gave acceptable spike and surrogate recoveries. Samples 86173-5, 86173-11, 86173-14, 86173-17 and 86173-18 were re-extracted and reanalyzed due to a possible phthalate contamination. All reanalyses resulted in BDL for Bis(2-ethylhexyl)phthalate.

VOA analysis (EPA 8260) gave acceptable spike and surrogate recoveries. Samples 86173-9 and 86173-17 were reanalyzed at lesser dilution to provide adequate detection limits.

Metals analysis (EPA 6010) was split into two batches. Both batches met all data quality objectives. As analysis (EPA 7060) was split into two batches. Batch #32160 gave low MS/MSD/PDS. Batch #32173 met all data quality objectives. Tl analysis (EPA 7841) was split into two batches. Batch #32160 met all data quality objectives. Batch #32173 gave high MS/MSD. Se analysis (EPA 7740) was split into two batches. Batch #32160 gave low MS/MSD and high PDS. Batch #32173 gave low MS/MSD/PDS. Hg analysis (EPA 7470) was split into two batches. Both batches met all data quality objectives.

CN analysis (EPA 9010) was split into two batches. Both batches met all data quality objectives.

For  
Roy-Keith Smith, PhD  
Quality Assurance Manager

0856

A Unit of American Analytical Services, Inc.

Project Name: Sloss Industries

Project Number: TF0320.015

TEST	S86173_1	S86173_2	S86173_3	S86173_4	S86173_5	S86173_6
Sample ID :	970820-LD-38-GW0026	970819LD-38-GW0027	970819-LD-38-TB0004	970820-LD-39-FB0004	970820-LD-39-EB0004	970820-LD-39-GW-0034S
Cyanide	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
Total Cyanide (CN)						0.21
Metals	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
Total Barium (Ba)(EPA 6010A)		0.08				0.02
Total Chromium (Cr)(EPA 6010A)						
Total Copper (Cu)(EPA 6010A)						
Total Lead (Pb)(EPA 6010A)						
Total Mercury (Hg)(EPA 7470)						
Total Silver (Ag)(EPA 6010A)						
Total Zinc (Zn)(EPA 6010A)						
Volatile Organics (EPA 8260A)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Acetone						
Benzene						
Chlorobenzene						
1,1-Dichloroethene						
Toluene						
Trichloroethene						
Xylenes						
Base Neutral Extractables (EPA 8270B)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Acid Extractables (EPA 8270B)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)

Project Name: Sloss Industries

Project Number: TF0320.015

TEST	S86173_7	S86173_8	S86173_9	S86173_10	S86173_11
Sample ID :	970820-LD-39-GW-9034S	970820-LD-39-GW0033	970821-LD-39-GW0036	970821-LD-38-TB0005	970821-LD-38-GW0037
Cyanide	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
Total Cyanide (CN)	0.22	0.14			
Metals	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
Total Barium (Ba)(EPA 6010A)	0.02	0.10	0.02		0.07
Total Chromium (Cr)(EPA 6010A)					
Total Copper (Cu)(EPA 6010A)					
Total Lead (Pb)(EPA 6010A)					
Total Mercury (Hg)(EPA 7470)					
Total Silver (Ag)(EPA 6010A)			0.24		
Total Zinc (Zn)(EPA 6010A)			0.05		0.05
Volatile Organics (EPA 8260A)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Acetone					
Benzene					
Chlorobenzene					
1,1-Dichloroethene					
Toluene					
Trichloroethene					
Xylenes					
Base Neutral Extractables (EPA 8270B)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Acid Extractables (EPA 8270B)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)

Project Name: Sloss Industries

Project Number: TF0320.015

TEST	S86173_12	S86173_13	S86173_14	S86173_15	S86173_17
Sample ID :	970821-LD-39-GW0035	970821-LD-39-GW0031	970821-LD-39-GW0032	970821-LD-38-GW0030S	970821-LD-38-GW0030D
Cyanide	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
Total Cyanide (CN)	0.07	0.03	0.38		
Metals	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
Total Barium (Ba)(EPA 6010A)	0.07	0.12	0.03	0.13	0.50
Total Chromium (Cr)(EPA 6010A)				0.01	
Total Copper (Cu)(EPA 6010A)				0.02	
Total Lead (Pb)(EPA 6010A)					
Total Mercury (Hg)(EPA 7470)					
Total Silver (Ag)(EPA 6010A)					
Total Zinc (Zn)(EPA 6010A)				0.18	
Volatile Organics (EPA 8260A)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Acetone		120		1000	120
Benzene					
Chlorobenzene					
1,1-Dichloroethene					
Toluene					
Trichloroethene					
Xylenes					
Base Neutral Extractables (EPA 8270B)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Acid Extractables (EPA 8270B)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)

Project Name: Sloss Industries

Project Number: TF0320.015

12/13/97

TEST	S86173_18	S86173_19
Sample ID :	970821-LD-39-GW0034D	970821-LD-38-GW0026
Cyanide	(mg/l)	(mg/l)
Total Cyanide (CN)		
Metals	(mg/l)	(mg/l)
Total Barium (Ba)(EPA 6010A)	0.03	0.26
Total Chromium (Cr)(EPA 6010A)	0.01	0.02
Total Copper (Cu)(EPA 6010A)	0.03	
Total Lead (Pb)(EPA 6010A)	0.04	
Total Mercury (Hg)(EPA 7470)		
Total Silver (Ag)(EPA 6010A)		
Total Zinc (Zn)(EPA 6010A)	0.21	0.20
Volatile Organics (EPA 8260A)	(ug/l)	(ug/l)
Acetone	66	120
Benzene	6	13
Chlorobenzene		
1,1-Dichloroethene		
Toluene		7
Trichloroethene		
Xylenes	7	23
Base Neutral Extractables (EPA 8270B)	(ug/l)	(ug/l)
Acid Extractables (EPA 8270B)	(ug/l)	(ug/l)



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86173-1

September 19, 1997

### Sample Description

Sloss Industries

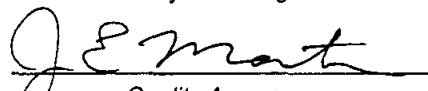
Groundwater, G & M Project #TF0320.015, 970820-LD-38-GW0026, 08/20/97, 9:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
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Hold until further notice.

Respectfully submitted,

  
Project Manager

  
Quality Assurance

**Laboratory Report**

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: **86173-2**

September 19, 1997

**Sample Description**

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970819-LD-38-GW0027, 08/20/97, 17:50, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
<b>Priority Pollutant Metals</b>						
<b>Metals</b>						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	0.08	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
<b>Volatile Organics (EPA 8260A)</b>						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970819-LD-38-GW0027, 08/20/97, 17:50, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
1000125	Styrene	BDL	5	ug/l	1	EPA 8260A
71005	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
80755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
100027	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit



## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970819-LD-38-GW0027, 08/20/97, 17:50, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270F
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270F
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270L
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit


## Sample Description

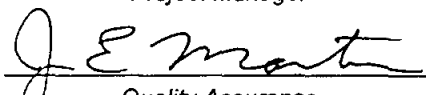
Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970819-LD-38-GW0027, 08/20/97, 17:50, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86173-3

September 19, 1997

### Sample Description

Sloss Industries

Water, G & M Project #TF0320.015, 970819-LD-38-TB0004, 08/19/97, 18:00, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0866


## Sample Description

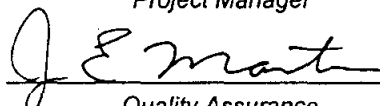
Sloss Industries

Water, G &amp; M Project #TF0320.015, 970819-LD-38-TB0004, 08/19/97, 18:00, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A

Respectfully submitted,

  
Project Manager

  
Quality Assurance

**Laboratory Report**

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: **86173-4**

September 19, 1997

**Sample Description**

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970820-LD-39-FB0004, 08/20/97, 11:20, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
<b>Priority Pollutant Metals</b>						
<b>Metals</b>						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	BDL	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010/
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
<b>Volatile Organics (EPA 8260A)</b>						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260/
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260.
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

## Sample Description

Gloss Industries

Water, G &amp; M Project #TF0320.015, 970820-LD-39-FB0004, 08/20/97, 11:20, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
127184	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
37650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
27	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970820-LD-39-FB0004, 08/20/97, 11:20, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

0870

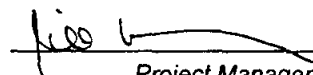
## Sample Description

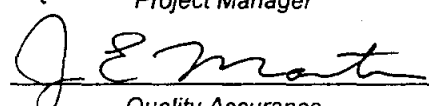
Sloss Industries

Water, G &amp; M Project #TF0320.015, 970820-LD-39-FB0004, 08/20/97, 11:20, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance





# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86173-5

September 19, 1997

### Sample Description

Sloss Industries

Water, G & M Project #TF0320.015, 970820-LD-39-EB0004, 08/20/97, 11:40, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
<b>Priority Pollutant Metals</b>						
<b>Metals</b>						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	BDL	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
<b>Volatile Organics (EPA 8260A)</b>						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0872

## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970820-LD-39-EB0004, 08/20/97, 11:40, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
750045	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
95475	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
106427	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
37865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

## Sample Description

Sloss Industries

Water, G &amp; M Project #TF0320.015, 970820-LD-39-EB0004, 08/20/97, 11:40, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

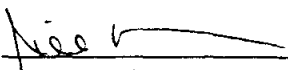
**Sample Description**

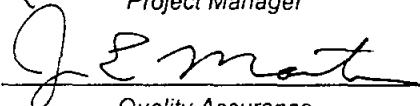
Sloss Industries

Water, G &amp; M Project #TF0320.015, 970820-LD-39-EB0004, 08/20/97, 11:40, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86173-6

September 19, 1997

### Sample Description

Sloss Industries

Groundwater, G & M Project #TF0320.015, 970820-LD-39-GW0034S, 08/20/97, 12:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	0.21	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	0.02	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0876

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970820-LD-39-GW0034S, 08/20/97, 12:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
1000125	Styrene	BDL	5	ug/l	1	EPA 8260A
127184	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
37650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
82755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
127	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970820-LD-39-GW0034S, 08/20/97, 12:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

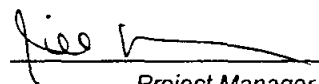
## Sample Description

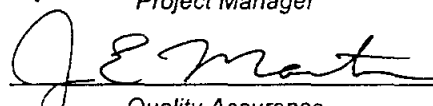
Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970820-LD-39-GW0034S, 08/20/97, 12:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance





# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86173-7

September 19, 1997

### Sample Description

Sloss Industries

Groundwater, G & M Project #TF0320.015, 970820-LD-39-GW9034S, 08/20/97,, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	0.22	0.02	mg/l	1	EPA 9010A
<b>Priority Pollutant Metals</b>						
<b>Metals</b>						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	0.02	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
<b>Volatile Organics (EPA 8260A)</b>						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260
74873	Chloromethane	BDL	10	ug/l	1	EPA 826C
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0880

**Sample Description**

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970820-LD-39-GW9034S, 08/20/97,, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100125	Styrene	BDL	5	ug/l	1	EPA 8260A
100125	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
80755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
100127	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

0881

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970820-LD-39-GW9034S, 08/20/97,, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

0882

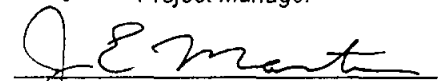
**Sample Description**

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970820-LD-39-GW9034S, 08/20/97,, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
\_\_\_\_\_  
Project Manager  
\_\_\_\_\_  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86173-8

September 19, 1997

### Sample Description

Sloss Industries

Groundwater, G & M Project #TF0320.015, 970820-LD-39-GW0033, 08/20/97, 17:20, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	0.14	0.02	mg/l	1	EPA 9010A
<b>Priority Pollutant Metals</b>						
<b>Metals</b>						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	0.10	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010/
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
<b>Volatile Organics (EPA 8260A)</b>						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260/
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260,
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0884

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970820-LD-39-GW0033, 08/20/97, 17:20, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
1004125	Styrene	BDL	5	ug/l	1	EPA 8260A
1004125	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
87755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
1004127	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970820-LD-39-GW0033, 08/20/97, 17:20, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270P
218019	Chrysene	BDL	10	ug/l	1	EPA 8270
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

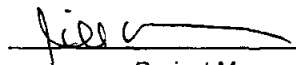
**Sample Description**

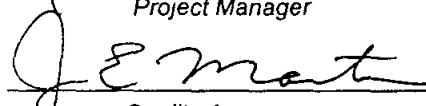
Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970820-LD-39-GW0033, 08/20/97, 17:20, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance





# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 86173-9

September 19, 1997

### Sample Description

Sloss Industries

Groundwater, G & M Project #TF0320.015, 970821-LD-39-GW0036, 08/21/97, 12:40, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	0.02	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	0.24	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	0.05	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0888

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-39-GW0036, 08/21/97, 12:40, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
73875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100025	Styrene	BDL	5	ug/l	1	EPA 8260A
7145	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
10127	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-39-GW0036, 08/21/97, 12:40, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

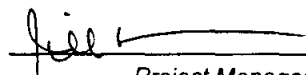
## Sample Description

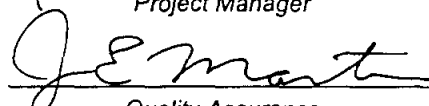
Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-39-GW0036, 08/21/97, 12:40, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86173-10

September 19, 1997

### Sample Description

Sloss Industries

Groundwater, G & M Project #TF0320.015, 970821-LD-38-TB0005, 08/21/97, 12:50, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

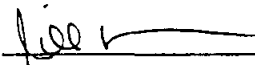
**Sample Description**

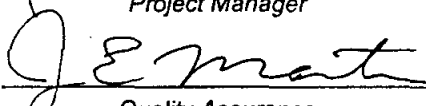
Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-38-TB0005, 08/21/97, 12:50, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86173-11

September 19, 1997

### Sample Description

Sloss Industries

Groundwater, G & M Project #TF0320.015, 970821-LD-38-GW0037, 08/21/97, 9:10, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	0.07	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	0.05	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0894

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-38-GW0037, 08/21/97, 9:10, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
5	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
1027	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit



## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-38-GW0037, 08/21/97, 9:10, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

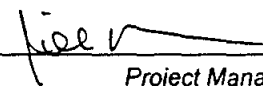
## Sample Description

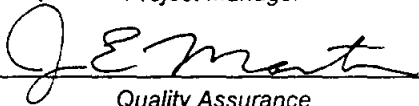
Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-38-GW0037, 08/21/97, 9:10, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
93953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86173-12

September 19, 1997

### Sample Description

Sloss Industries

Groundwater, G & M Project #TF0320.015, 970821-LD-39-GW0035, 08/21/97, 15:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	0.07	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	0.07	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0898

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-39-GW0035, 08/21/97, 15:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
127184	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
127	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-39-GW0035, 08/21/97, 15:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

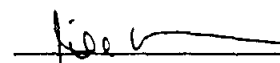
**Sample Description**

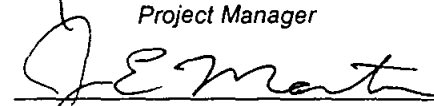
Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-39-GW0035, 08/21/97, 15:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: **86173-13**

September 19, 1997

### Sample Description

Sloss Industries

Groundwater, G & M Project #TF0320.015, 970821-LD-39-GW0031, 08/21/97, 10:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	0.03	0.02	mg/l	1	EPA 9010A
<b>Priority Pollutant Metals</b>						
<b>Metals</b>						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	0.12	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
<b>Volatile Organics (EPA 8260A)</b>						
67641	Acetone	120	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0902

Page 1 of 4

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-39-GW0031, 08/21/97, 10:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
1000125	Styrene	BDL	5	ug/l	1	EPA 8260A
100005	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
100027	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

0903



## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-39-GW0031, 08/21/97, 10:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

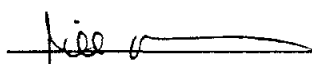
## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-39-GW0031, 08/21/97, 10:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86173-14

September 19, 1997

### Sample Description

Sloss Industries

Groundwater, G & M Project #TF0320.015, 970821-LD-39-GW0032, 08/21/97, 11:45, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	0.38	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	0.03	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0906

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-39-GW0032, 08/21/97, 11:45, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100125	Styrene	BDL	5	ug/l	1	EPA 8260A
100145	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
95555	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
100127	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

0907

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-39-GW0032, 08/21/97, 11:45, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270E
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270E
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

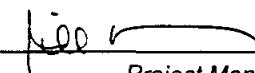
## Sample Description

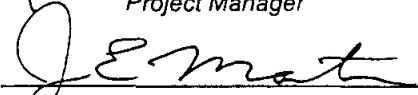
Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-39-GW0032, 08/21/97, 11:45, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 86173-15

September 19, 1997

### Sample Description

Sloss Industries

Groundwater, G & M Project #TF0320.015, 970821-LD-38-GW0030S, 08/21/97, 13:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	0.13	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	0.01	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	0.02	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	0.18	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	1000	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-38-GW0030S, 08/21/97, 13:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
1004125	Styrene	BDL	5	ug/l	1	EPA 8260A
1004125	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
80755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
10727	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit



## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-38-GW0030S, 08/21/97, 13:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

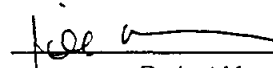
## Sample Description

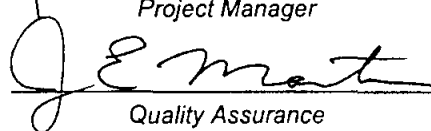
Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-38-GW0030S, 08/21/97, 13:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 86173-16

September 19, 1997

### Sample Description

Sloss Industries

Groundwater, G & M Project #TF0320.015, 970821-LD-38-GW0030SMS, 08/21/97, 13:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	0.19	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	2.2	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	0.078	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	8.9	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	1.1	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	0.40	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	0.92	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	1.2	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	4.4	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	1.84	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	2.1	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	0.056	0.04	mg/l	1	EPA 7740
7440224	Total Silver	0.24	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	0.106	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	2.3	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	1200	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	60	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	54	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0914

## Sample Description

Gloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-38-GW0030SMS, 08/21/97, 13:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	57	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
100425	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	57	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	51	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	140	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	140	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
80755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
27	4-Nitrophenol	69	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	68	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-38-GW0030SMS, 08/21/97, 13:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	100	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	54	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	64	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

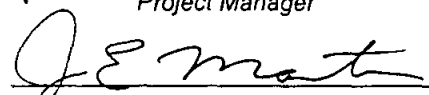
## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-38-GW0030SMS, 08/21/97, 13:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	95	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	120	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	56	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86173-17

September 19, 1997

### Sample Description

Sloss Industries

Groundwater, G & M Project #TF0320.015, 970821-LD-38-GW0030D, 08/21/97, 15:00, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
<b>Priority Pollutant Metals</b>						
<b>Metals</b>						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	0.50	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	BDL	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	BDL	0.02	mg/l	1	EPA 6010A
<b>Volatile Organics (EPA 8260A)</b>						
67641	Acetone	120	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0918

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-38-GW0030D, 08/21/97, 15:00, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
1000125	Styrene	BDL	5	ug/l	1	EPA 8260A
71003	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
82755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
127	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit



## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-38-GW0030D, 08/21/97, 15:00, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

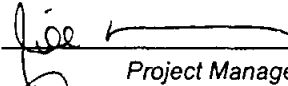
## Sample Description


Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-38-GW0030D, 08/21/97, 15:00, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86173-18

September 19, 1997

### Sample Description

Sloss Industries

Groundwater, G & M Project #TF0320.015, 970821-LD-39-GW0034D, 08/21/97, 17:15, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	0.03	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	0.01	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	0.03	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	0.04	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	0.21	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	66	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	6	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0922

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-39-GW0034D, 08/21/97, 17:15, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
127184	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	7	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
107	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-39-GW0034D, 08/21/97, 17:15, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

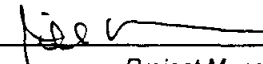
**Sample Description**

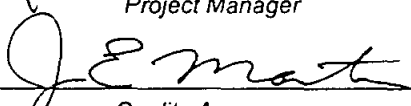
Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-39-GW0034D, 08/21/97, 17:15, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 86173-19

September 19, 1997

### Sample Description

Sloss Industries

Groundwater, G & M Project #TF0320.015, 970821-LD-39/GW0026, 08/21/97, 17:50, received 08/22/97

*(K\*) 12/18/97*  
Detection

CAS #	Analyte	Result	Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	BDL	0.02	mg/l	1	EPA 9010A
Priority Pollutant Metals						
Metals						
7440360	Total Antimony	BDL	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	BDL	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	0.26	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	BDL	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	BDL	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	0.02	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	BDL	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	BDL	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	BDL	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	BDL	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	BDL	0.04	mg/l	1	EPA 7740
7440224	Total Silver	BDL	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	BDL	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	0.20	0.02	mg/l	1	EPA 6010A
Volatile Organics (EPA 8260A)						
67641	Acetone	120	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	13	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0926

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-38-GW0026, 08/21/97, 17:50, received 08/22/97

8 KX 12/18/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
125	Styrene	BDL	5	ug/l	1	EPA 8260A
145	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	7	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	23	5	ug/l	1	EPA 8260A
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
87755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
127	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

0927



## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-36-GW0026, 08/21/97, 17:50, received 08/22/97

86173 12/21/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 827C
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 827C
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270L
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

## Sample Description

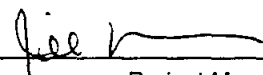
Sloss Industries

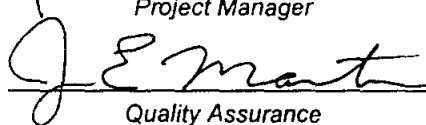
Groundwater, G &amp; M Project #TF0320.015, 970821-LD-39-GW0026, 08/21/97, 17:50, received 08/22/97

8/21/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 86173-20

September 19, 1997

### Sample Description

Sloss Industries  
Aqueous,, Batch # 32353,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Acid Extractable Organics (EPA 8270B)						
59507	4-Chloro-3-methylphenol	BDL	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	BDL	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
100027	4-Nitrophenol	BDL	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	BDL	10	ug/l	1	EPA 8270B
108952	Phenol	BDL	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
Base/Neutral Extractable Organics (EPA 8270B)						
83329	Acenaphthene	BDL	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B


BDL - Below Detection Limit


0930

**Sample Description**  
 Sloss Industries  
 Aqueous,, Batch # 32353,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
112741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
112741	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	BDL	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	BDL	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	BDL	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
 Project Manager

  
 Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin  
Report No.: 86173-21

September 19, 1997

### Sample Description

Sloss Industries  
Aqueous,, Batch # 32455,,


CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
Volatile Organics (EPA 8260A)						
67641	Acetone	BDL	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	BDL	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	BDL	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A


BDL - Below Detection Limit

**Sample Description**  
Sloss Industries  
Aqueous,, Batch # 32455,,

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
79345	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	BDL	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	BDL	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis

110 Technology Parkway Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

## Laboratory Report

Sloss Industries  
3500 35th Avenue N  
Birmingham, AL 35207

Attention: Mr. Mike P Griffin

Report No.: 86173-22

September 19, 1997

### Sample Description

Sloss Industries

Groundwater, G & M Project #TF0320.015, 970821-LD-38-GW0030SMSD, 08/21/97, 13:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
57125	Total Cyanide	0.19	0.02	mg/l	1	EPA 9010A
<b>Priority Pollutant Metals</b>						
<b>Metals</b>						
7440360	Total Antimony	2.2	0.05	mg/l	1	EPA 6010A
7440382	Total Arsenic	0.077	0.01	mg/l	1	EPA 7060A
7440393	Total Barium	8.8	0.01	mg/l	1	EPA 6010A
7440417	Total Beryllium	1.1	0.005	mg/l	1	EPA 6010A
7440439	Total Cadmium	0.39	0.005	mg/l	1	EPA 6010A
7440473	Total Chromium	0.91	0.01	mg/l	1	EPA 6010A
7440508	Total Copper	1.2	0.02	mg/l	1	EPA 6010A
7439921	Total Lead	4.3	0.025	mg/l	1	EPA 6010A
7439976	Total Mercury	2.02	0.0003	mg/l	1	EPA 7470
7440020	Total Nickel	2.0	0.02	mg/l	1	EPA 6010A
7782492	Total Selenium	0.058	0.04	mg/l	1	EPA 7740
7440224	Total Silver	0.24	0.01	mg/l	1	EPA 6010A
7440280	Total Thallium	0.109	0.04	mg/l	1	EPA 7841
7440666	Total Zinc	2.3	0.02	mg/l	1	EPA 6010A
<b>Volatile Organics (EPA 8260A)</b>						
67641	Acetone	1300	50	ug/l	1	EPA 8260A
107028	Acrolein	BDL	50	ug/l	1	EPA 8260A
107131	Acrylonitrile	BDL	50	ug/l	1	EPA 8260A
71432	Benzene	59	5	ug/l	1	EPA 8260A
75274	Bromodichloromethane	BDL	5	ug/l	1	EPA 8260A
75252	Bromoform	BDL	5	ug/l	1	EPA 8260A
74839	Bromomethane	BDL	10	ug/l	1	EPA 8260A
75150	Carbon disulfide	BDL	5	ug/l	1	EPA 8260A
56235	Carbon tetrachloride	BDL	5	ug/l	1	EPA 8260A
108907	Chlorobenzene	52	5	ug/l	1	EPA 8260A
75003	Chloroethane	BDL	5	ug/l	1	EPA 8260A
67663	Chloroform	BDL	5	ug/l	1	EPA 8260A
74873	Chloromethane	BDL	10	ug/l	1	EPA 8260A
110758	2-Chloroethylvinyl ether	BDL	10	ug/l	1	EPA 8260A
124481	Dibromochloromethane	BDL	5	ug/l	1	EPA 8260A

BDL - Below Detection Limit

0934

## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-38-GW0030SMSD, 08/21/97, 13:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
106934	1,2-Dibromoethane	BDL	5	ug/l	1	EPA 8260A
74953	Dibromomethane	BDL	5	ug/l	1	EPA 8260A
110576	trans-1,4-Dichloro-2-butene	BDL	10	ug/l	1	EPA 8260A
75718	Dichlorodifluoromethane	BDL	5	ug/l	1	EPA 8260A
75343	1,1-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
107062	1,2-Dichloroethane	BDL	5	ug/l	1	EPA 8260A
75354	1,1-Dichloroethene	55	5	ug/l	1	EPA 8260A
156605	trans-1,2-Dichloroethene	BDL	5	ug/l	1	EPA 8260A
78875	1,2-Dichloropropane	BDL	5	ug/l	1	EPA 8260A
10061015	cis-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
10061026	trans-1,3-Dichloropropene	BDL	5	ug/l	1	EPA 8260A
100414	Ethylbenzene	BDL	5	ug/l	1	EPA 8260A
97632	Ethyl methacrylate	BDL	5	ug/l	1	EPA 8260A
591786	2-Hexanone	BDL	50	ug/l	1	EPA 8260A
74884	Iodomethane	BDL	5	ug/l	1	EPA 8260A
78933	2-Butanone	BDL	50	ug/l	1	EPA 8260A
75092	Methylene chloride	BDL	5	ug/l	1	EPA 8260A
108101	4-Methyl-2-pentanone	BDL	50	ug/l	1	EPA 8260A
100425	Styrene	BDL	5	ug/l	1	EPA 8260A
100425	1,1,2,2-Tetrachloroethane	BDL	5	ug/l	1	EPA 8260A
127184	Tetrachloroethene	BDL	5	ug/l	1	EPA 8260A
108883	Toluene	55	2	ug/l	1	EPA 8260A
71556	1,1,1-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79005	1,1,2-Trichloroethane	BDL	2	ug/l	1	EPA 8260A
79016	Trichloroethene	52	2	ug/l	1	EPA 8260A
75694	Trichlorofluoromethane	BDL	10	ug/l	1	EPA 8260A
96184	1,2,3-Trichloropropane	BDL	5	ug/l	1	EPA 8260A
108054	Vinyl acetate	BDL	10	ug/l	1	EPA 8260A
75014	Vinyl chloride	BDL	10	ug/l	1	EPA 8260A
1330207	Xylenes	BDL	5	ug/l	1	EPA 8260A
<b>Acid Extractable Organics (EPA 8270B)</b>						
59507	4-Chloro-3-methylphenol	150	10	ug/l	1	EPA 8270B
95578	2-Chlorophenol	150	10	ug/l	1	EPA 8270B
120832	2,4-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
87650	2,6-Dichlorophenol	BDL	10	ug/l	1	EPA 8270B
105679	2,4-Dimethylphenol	BDL	10	ug/l	1	EPA 8270B
534521	2-Methyl-4,6-dinitrophenol	BDL	50	ug/l	1	EPA 8270B
51285	2,4-Dinitrophenol	BDL	50	ug/l	1	EPA 8270B
95487	2-Methylphenol	BDL	10	ug/l	1	EPA 8270B
108394	3-Methylphenol	BDL	10	ug/l	1	EPA 8270B
106445	4-Methylphenol	BDL	10	ug/l	1	EPA 8270B
88755	2-Nitrophenol	BDL	10	ug/l	1	EPA 8270B
10027	4-Nitrophenol	87	50	ug/l	1	EPA 8270B
87865	Pentachlorophenol	85	10	ug/l	1	EPA 8270B
108952	Phenol	110	10	ug/l	1	EPA 8270B
95954	2,4,5-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit



## Sample Description

Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-38-GW0030SMSD, 08/21/97, 13:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
88062	2,4,6-Trichlorophenol	BDL	10	ug/l	1	EPA 8270B
58902	2,3,4,6-Tetrachlorophenol	BDL	10	ug/l	1	EPA 8270B
<b>Base/Neutral Extractable Organics (EPA 8270B)</b>						
83329	Acenaphthene	110	10	ug/l	1	EPA 8270B
208968	Acenaphthylene	BDL	10	ug/l	1	EPA 8270B
120127	Anthracene	BDL	10	ug/l	1	EPA 8270B
56553	Benzo(a)anthracene	BDL	10	ug/l	1	EPA 8270B
205992	Benzo(b)fluoranthene	BDL	10	ug/l	1	EPA 8270B
207089	Benzo(k)fluoranthene	BDL	10	ug/l	1	EPA 8270B
191242	Benzo(ghi)perylene	BDL	10	ug/l	1	EPA 8270B
50328	Benzo(a)pyrene	BDL	10	ug/l	1	EPA 8270B
100516	Benzyl Alcohol	BDL	10	ug/l	1	EPA 8270B
111911	Bis(2-chloroethoxy)methane	BDL	10	ug/l	1	EPA 8270B
111444	Bis(2-chloroethyl)ether	BDL	10	ug/l	1	EPA 8270B
39638329	Bis(2-chloroisopropyl)ether	BDL	10	ug/l	1	EPA 8270B
117817	Bis(2-ethylhexyl)phthalate	BDL	10	ug/l	1	EPA 8270B
101553	4-Bromophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
106478	p-Chloroaniline	BDL	10	ug/l	1	EPA 8270B
91587	2-Chloronaphthalene	BDL	10	ug/l	1	EPA 8270B
7005723	4-Chlorophenyl phenyl ether	BDL	10	ug/l	1	EPA 8270B
218019	Chrysene	BDL	10	ug/l	1	EPA 8270B
53703	Dibenz(a,h)anthracene	BDL	10	ug/l	1	EPA 8270B
132649	Dibenzofuran	BDL	10	ug/l	1	EPA 8270B
84742	Di-n-butylphthalate	BDL	10	ug/l	1	EPA 8270B
541731	1,3-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
106467	1,4-Dichlorobenzene	60	10	ug/l	1	EPA 8270B
95501	1,2-Dichlorobenzene	BDL	10	ug/l	1	EPA 8270B
119937	3,3'-Dimethylbenzidine	BDL	100	ug/l	1	EPA 8270B
84662	Diethylphthalate	BDL	10	ug/l	1	EPA 8270B
131113	Dimethylphthalate	BDL	10	ug/l	1	EPA 8270B
121142	2,4-Dinitrotoluene	79	10	ug/l	1	EPA 8270B
606202	2,6-Dinitrotoluene	BDL	10	ug/l	1	EPA 8270B
117840	Di-n-octylphthalate	BDL	10	ug/l	1	EPA 8270B
206440	Fluoranthene	BDL	10	ug/l	1	EPA 8270B
86737	Fluorene	BDL	10	ug/l	1	EPA 8270B
118741	Hexachlorobenzene	BDL	10	ug/l	1	EPA 8270B
87683	Hexachlorobutadiene	BDL	10	ug/l	1	EPA 8270B
77474	Hexachlorocyclopentadiene	BDL	10	ug/l	1	EPA 8270B
67721	Hexachloroethane	BDL	2	ug/l	1	EPA 8270B
193395	Indeno(1,2,3-cd)pyrene	BDL	10	ug/l	1	EPA 8270B
78591	Isophorone	BDL	10	ug/l	1	EPA 8270B
91576	2-Methylnaphthalene	BDL	10	ug/l	1	EPA 8270B
91203	Naphthalene	BDL	10	ug/l	1	EPA 8270B
88744	2-Nitroaniline	BDL	10	ug/l	1	EPA 8270L
99092	3-Nitroaniline	BDL	10	ug/l	1	EPA 8270B
100016	4-Nitroaniline	BDL	10	ug/l	1	EPA 8270B

BDL - Below Detection Limit

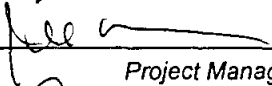
## Sample Description


Sloss Industries

Groundwater, G &amp; M Project #TF0320.015, 970821-LD-38-GW0030SMSD, 08/21/97, 13:30, received 08/22/97

CAS #	Analyte	Result	Detection Limit	Units	Dilution Factor	Analytical Method
98953	Nitrobenzene	BDL	10	ug/l	1	EPA 8270B
62759	N-Nitrosodimethylamine	BDL	10	ug/l	1	EPA 8270B
621647	N-Nitrosodi-n-propylamine	100	10	ug/l	1	EPA 8270B
85018	Phenanthrene	BDL	10	ug/l	1	EPA 8270B
129000	Pyrene	120	10	ug/l	1	EPA 8270B
110861	Pyridine	BDL	10	ug/l	1	EPA 8270B
120821	1,2,4-Trichlorobenzene	64	10	ug/l	1	EPA 8270B

Respectfully submitted,

  
Project Manager

  
Quality Assurance

Analytical Services Inc. Batch QC  
 For Report Number :86173  
 Base Neutrals / Acids

Matrix : Aqueous

Batch # 32353

Method : EPA 8270

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
Phenol	38	36	3	12 - 89	0 - 42
2-Chlorophenol	78	77	1	27 - 123	0 - 40
1,4-Dichlorobenzene	63	62	3	36 - 97	0 - 28
N-Nitrosodipropylamine	76	76	0	41 - 116	0 - 38
1,2,4-Trichlorobenzene	72	68	5	44 - 142	0 - 28
4-Chloro-3-methylphenol	71	71	1	23 - 97	0 - 42
Acenaphthene	101	96	5	46 - 118	0 - 31
2,4-Dinitrotoluene	81	79	2	24 - 96	0 - 38
4-Nitrophenol	19	26	31	10 - 80	0 - 50
Pentachlorophenol	49	63	26	9 - 103	0 - 50
Pyrene	97	92	4	26 - 127	0 - 31

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
Phenol	55	56	3	12 - 89	0 - 42
2-Chlorophenol	74	76	2	27 - 123	0 - 40
1,4-Dichlorobenzene	56	62	10	36 - 97	0 - 28
N-Nitrosodipropylamine	98	104	6	41 - 116	0 - 38
1,2,4-Trichlorobenzene	58	66	13	44 - 142	0 - 28
4-Chloro-3-methylphenol	70	76	8	23 - 97	0 - 42
Acenaphthene	104	108	4	46 - 118	0 - 31
2,4-Dinitrotoluene	66	82	21	24 - 96	0 - 38
4-Nitrophenol	35	45	24	10 - 80	0 - 50
Pentachlorophenol	35	44	22	9 - 103	0 - 50
Pyrene	121	120	1	26 - 127	0 - 31

## Analytical Services Inc. Batch QC

## Surrogate Recovery

## Base Neutrals / Acids

Matrix : Aqueous

Batch # 32353

Method : EPA 8270

## % Recovery Objectives

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S1	2-Fluorophenol	21 - 100
S2	Phenol-d5	10 - 94
S3	Nitrobenzene-d5	35 - 114
S4	2-Fluorobiphenyl	43 - 116
S5	2,4,6-Tribromophenol	10 - 123
S6	Terphenyl-d14	33 - 141

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Sample	File	S1	S2	S3	S4	S5	S6
<hr/>							
32353BLK	B0230	50	37	84	95	56	94
32353LCS	B0231	48	39	83	93	74	90
32353LCSD	B0232	49	37	80	86	82	88
86173-2	A6618	40	33	99	115	66	117
86173-4	A6619	50	45	96	116	69	121
86173-5	A6620	45	44	91	109	69	131
86173-6	A6621	47	42	90	111	69	129
86173-8	A6622	42	38	92	112	67	127
86173-11	A6623	35	36	96	111	55	125
86173-12	A6624	33	29	71	86	49	92
86173-13	A6625	45	39	92	107	62	108
86173-14	A6626	37	34	86	99	57	111
86173-17	A6627	42	37	86	105	64	118
86173-18	A6628	47	43	91	105	79	118
86173-19	A6649	52	44	92	108	92	111
86173-7DUP	A6651	52	45	92	108	77	115
86173-9	A6652	44	39	77	104	69	127
86173-15	A6653	41	36	79	100	61	121
86173-16MS	A6660	63	57	91	102	60	123
86173-16MSD	A6661	61	59	93	106	65	125
86173-5RR	B0515	32	22	60	64	62	76
86173-11RR	B0516	30	20	55	61	44	78
86173-14RR	B0512	37	23	65	67	74	85
86173-17RR	B0513	40	24	68	72	80	72
86173-18RR	B0514	46	32	63	67	67	69

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Sample Batch Information  
Base Neutrals / Acids Method : EPA 8270

Sample ID	Preparation			Preparation Notes	Analysis			Inst #
	Date	Time	By		Date	Time	By	
86173-2	08/25/97	0830	JH/TB		08/29/97	1621	TAS	5970
86173-4	08/27/97	0830	JH/TB		08/29/97	1655	TAS	5970
86173-5	08/27/97	0830	JH/TB		08/29/97	1728	TAS	5970
86173-6	08/27/97	0830	JH/TB		08/29/97	1802	TAS	5970
86173-7DUP	08/27/97	0830	JH/TB		08/30/97	1522	TAS	5970
86173-8	08/27/97	0830	JH/TB		08/29/97	1836	TAS	5970
86173-9	08/27/97	0830	JH/TB		08/30/97	1556	TAS	5970
86173-11	08/27/97	0830	JH/TB		08/29/97	1909	TAS	5970
86173-12	08/27/97	0830	JH/TB		08/29/97	1943	TAS	5970
32353BLK	08/27/97	0830	JH/TB		08/28/97	1227	RFA	5971
32353LCS	08/27/97	0830	JH/TB		08/28/97	1301	RFA	5971
32353LCSD	08/27/97	0830	JH/TB		08/28/97	1335	RFA	5971
86173-13	08/25/97	1600	JH		08/29/97	2016	TAS	5970
86173-14	08/25/97	1600	JH		08/29/97	2049	TAS	5970
86173-15	08/25/97	1600	JH		08/30/97	1629	TAS	5970
86173-16MS	08/25/97	1600	JH		08/30/97	2023	TAS	5970
86173-16MSD	08/25/97	1600	JH		08/30/97	2056	TAS	5970
86173-17	08/25/97	1600	JH		08/29/97	2123	TAS	5970
86173-18	08/25/97	1600	JH		08/29/97	2156	TAS	5970
86173-19	08/25/97	1600	JH		08/30/97	1414	TAS	5970
86173-5RR	09/05/97	1300	JH		09/09/97	1130	RFA	5971
86173-11RR	09/05/97	1300	JH		09/09/97	1206	RFA	5971
86173-14RR	09/05/97	1300	JH		09/09/97	0939	RFA	5971
86173-17RR	09/05/97	1300	JH		09/09/97	1016	RFA	5971
86173-18RR	09/05/97	1300	JH		09/09/97	1053	RFA	5971
86173-7	09/05/97	1300	JH		/	/		

Analytical Services Inc. Batch QC  
For Report Number :86173  
Volatile Organics

Matrix : Aqueous

Batch # 32445

Method : EPA 8260

Lab Control Information Analyte	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	104	103	1	61 - 145	0 - 14
Trichloroethene	87	88	1	71 - 120	0 - 14
Benzene	91	91	1	76 - 127	0 - 11
Toluene	99	96	3	76 - 125	0 - 13
Chlorobenzene	96	94	2	75 - 130	0 - 13

Matrix Spike Information Analyte	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
1,1-Dichloroethene	115	110	4	61 - 145	0 - 14
Trichloroethene	102	104	2	71 - 120	0 - 14
Benzene	121	117	3	76 - 127	0 - 11
Toluene	113	109	3	76 - 125	0 - 13
Chlorobenzene	108	104	4	75 - 130	0 - 13

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Aqueous

Batch # 32445

Method : EPA 8260

## % Recovery Objectives

S1	1,2-Dichloroethane-d4	76 - 114
S2	Toluene-d8	88 - 110
S3	Ethylbenzene-d10	75 - 115
S4	4-Bromofluorobenzene	86 - 115

Sample	File	S1	S2	S3	S4	S5	S6
32445BLK1A	>LI081	94	93	91	98		
^^Note: 86173-21							
86173-7	>LI105	95	93	92	98		
86173-8	>LI106	97	96	91	102		
86173-2	>LI100	96	97	92	96		
86173-3	>LI101	99	95	93	99		
86173-4	>LI102	94	96	91	96		
86173-5	>LI103	96	92	85	97		
86173-6	>LI104	95	96	91	99		
32445LCS	>LI090	93	99	96	98		
32445LCSD	>LI091	98	95	95	97		
32445BLK1B	>LI146	92	90	94	94		
86173-9	>LI174	93	90	92	93		
86173-10	>LI175	93	89	92	91		
32445BLK2A	>RK443	97	102	104	94		
86173-11	>RK459	109	102	103	104		
32445BLK2B	>RK466	101	101	106	98		
86173-12	>RK467	110	88	88	107		
86173-13	>RK468	103	103	104	101		
86173-14	>RK469	102	101	103	100		
86173-15	>RK470	101	101	104	99		
86173-15MS	>RK471	104	100	104	102		
^^Note: 86173-16							
86173-18	>RK472	101	99	102	98		
86173-17	>RK473	103	100	103	98		
86173-19	>RK474	102	100	102	100		
86173-15MSD	>RK478	107	101	100	98		
^^Note: 86173-16DUP							
32445BLK1C	>LI180	90	89	92	95		
86173-9RA	>LI193	90	92	95	94		
^^Note: RA AT LESSER DIL							
32445BLK1D	>SX012	92	95	92	97		
86173-17RA	>SX023	92	96	93	99		
^^Note: RA AT LESSER DIL							

Sample Batch Information  
Volatile Organics      Method : EPA 8260

Sample ID	Preparation		Preparation Notes	Analysis			Inst #
	Date	Time By		Date	Time	By	
32445BLK1A	/	/		08/26/97	1020	JKP	VOA1
86173-7	/	/		08/26/97	0245	JKP	VOA1
86173-8	/	/		08/26/97	0320	JKP	VOA1
86173-2	/	/		08/26/97	2351	JKP	VOA1
86173-3	/	/		08/27/97	0026	JKP	VOA1
86173-4	/	/		08/27/97	0100	JKP	VOA1
86173-5	/	/		08/27/97	0135	JKP	VOA1
86173-6	/	/		08/27/97	0210	JKP	VOA1
32445LCS	/	/		08/26/97	1537	JKP	VOA1
32445LCSD	/	/		08/26/97	1612	JKP	VOA1
32445BLK1B	/	/		08/28/97	1039	JKP	VOA1
86173-9	/	/		08/29/97	0329	JKP	VOA1
86173-10	/	/		08/29/97	0404	JKP	VOA1
32445BLK2A	/	/		08/28/97	1759	JKP	VOA2
86173-11	/	/		08/29/97	0317	JKP	VOA2
32445BLK2B	/	/		08/29/97	1113	JKP	VOA2
86173-12	/	/		08/29/97	1349	JKP	VOA2
86173-13	/	/		08/29/97	1423	JKP	VOA2
86173-14	/	/		08/29/97	1457	JKP	VOA2
86173-15	/	/		08/29/97	1531	JKP	VOA2
86173-15MS	/	/		08/29/97	1605	JKP	VOA2
86173-18	/	/		08/29/97	1639	JKP	VOA2
86173-17	/	/		08/29/97	1713	JKP	VOA2
86173-19	/	/		08/29/97	1806	JKP	VOA2
86173-15MSD	/	/		08/29/97	1948	JKP	VOA2
32445BLK1C	/	/		08/29/97	1245	JKP	VOA1
86173-9RA	/	/		08/29/97	2053	JKP	VOA1
32445BLK1D	/	/		08/31/97	2321	JKP	VOA1
86173-17RA	/	/		09/01/97	0626	JKP	VOA1



Analytical Services Inc. Batch QC  
For Report Number :86173

## QC Batch General Information

Batch Number	Analyte	Analysis Method	Matrix	Blank Result	Prep. Method
32048	Hg	EPA 7470	Aqueous <	0.0002	
32160	Se	EPA 7740	Aqueous <	0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
32160	Tl	EPA 7841	Aqueous <	0.0020	
32160	As	EPA 7060	Aqueous <	0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
32163	Ag	EPA 6010	Aqueous <	0.0050	
32163	Ba	EPA 6010	Aqueous <	0.0100	
32163	Be	EPA 6010	Aqueous <	0.0030	
32163	Cd	EPA 6010	Aqueous <	0.0050	
32163	Cr	EPA 6010	Aqueous <	0.0050	
32163	Cu	EPA 6010	Aqueous <	0.0100	
32163	Ni	EPA 6010	Aqueous <	0.0100	
32163	Pb	EPA 6010	Aqueous <	0.0050	
32163	Sb	EPA 6010	Aqueous <	0.0060	
32163	Zn	EPA 6010	Aqueous <	0.0100	
32173	Se	EPA 7740	Aqueous <	0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
32173	Tl	EPA 7841	Aqueous <	0.0100	
^^Note : BATCH PASSES ON LCS/LCSD DUE TO MATRIX INTERFERENCE					
32173	As	EPA 7060	Aqueous <	0.0100	
32177	Ag	EPA 6010	Aqueous <	0.0050	
32177	Ba	EPA 6010	Aqueous <	0.0100	
32177	Be	EPA 6010	Aqueous <	0.0050	
32177	Cd	EPA 6010	Aqueous <	0.0050	
32177	Cr	EPA 6010	Aqueous <	0.0050	
32177	Cu	EPA 6010	Aqueous <	0.0100	
32177	Ni	EPA 6010	Aqueous <	0.0100	
32177	Pb	EPA 6010	Aqueous <	0.0050	
32177	Sb	EPA 6010	Aqueous <	0.0100	
32177	Zn	EPA 6010	Aqueous <	0.0100	
32362	Hg	EPA 7470	Aqueous <	0.0002	
32413	CN	EPA 9010	Aq/Solid <	0.0200	
32506	CN	EPA 9010	Aq/Solid <	0.0200	

Analytical Services Inc. Batch QC  
For Report Number :86173

## Lab Control Information

Batch Number	Analyte	Method	LC %Rec	LCD %Rec	LC RPD	%Recovery Range	RPD Range
32048	Hg	EPA 7470	100	96	4	76 - 124	0 - 20
32160	Se	EPA 7740	107	116	8	76 - 124	0 - 20
32160	Tl	EPA 7841	102	101	1	76 - 124	0 - 20
32160	As	EPA 7060	89	96	8	76 - 124	0 - 20
32163	Ag	EPA 6010	99	100	1	76 - 124	0 - 20
32163	Ba	EPA 6010	97	96	1	76 - 124	0 - 20
32163	Be	EPA 6010	93	93	0	76 - 124	0 - 20
32163	Cd	EPA 6010	95	95	0	76 - 124	0 - 20
32163	Cr	EPA 6010	94	94	0	76 - 124	0 - 20
32163	Cu	EPA 6010	100	99	1	76 - 124	0 - 20
32163	Ni	EPA 6010	90	90	0	76 - 124	0 - 20
32163	Pb	EPA 6010	93	92	1	76 - 124	0 - 20
32163	Sb	EPA 6010	110	110	0	76 - 124	0 - 20
32163	Zn	EPA 6010	92	90	2	76 - 124	0 - 20
32173	Se	EPA 7740	117	107	9	76 - 124	0 - 20
32173	Tl	EPA 7841	108	112	4	76 - 124	0 - 20
32173	As	EPA 7060	83	82	1	76 - 124	0 - 20
32177	Ag	EPA 6010	100	100	0	76 - 124	0 - 20
32177	Ba	EPA 6010	98	98	0	76 - 124	0 - 20
32177	Be	EPA 6010	98	97	1	76 - 124	0 - 20
32177	Cd	EPA 6010	92	92	0	76 - 124	0 - 20
32177	Cr	EPA 6010	100	100	0	76 - 124	0 - 20
32177	Cu	EPA 6010	97	98	1	76 - 124	0 - 20
32177	Ni	EPA 6010	94	95	1	76 - 124	0 - 20
32177	Pb	EPA 6010	100	100	0	76 - 124	0 - 20
32177	Sb	EPA 6010	100	100	0	76 - 124	0 - 20
32177	Zn	EPA 6010	95	97	2	76 - 124	0 - 20
32362	Hg	EPA 7470	96	99	3	76 - 124	0 - 20
32413	CN	EPA 9010	89	102	14	85 - 115	0 - 30
32506	CN	EPA 9010	96	102	6	75 - 125	0 - 30

## Matrix Spike Information

Batch Number	Analyte	Method	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
32048	Hg	EPA 7470	104	106	2	76 - 124	0 - 20
32160	Se	EPA 7740	21	22	5	76 - 124	0 - 20
32160	Tl	EPA 7841	85	84	1	76 - 124	0 - 20
32160	As	EPA 7060	65	76	16	76 - 124	0 - 20
32163	Ag	EPA 6010	92	100	8	76 - 124	0 - 20
32163	Ba	EPA 6010	88	96	9	76 - 124	0 - 20
32163	Be	EPA 6010	85	92	8	76 - 124	0 - 20
32163	Cd	EPA 6010	86	94	9	76 - 124	0 - 20
32163	Cr	EPA 6010	86	92	7	76 - 124	0 - 20
32163	Cu	EPA 6010	90	97	7	76 - 124	0 - 20
32163	Ni	EPA 6010	82	89	8	76 - 124	0 - 20

Analytical Services Inc. Batch QC  
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## Matrix Spike Information

Batch Number	Analyte	Method	MS %Rec	MSD %Rec	MS RPD	%Recovery Range	RPD Range
32163	Pb	EPA 6010	83	90	8	76 - 124	0 - 20
32163	Sb	EPA 6010	98	110	12	76 - 124	0 - 20
32163	Zn	EPA 6010	80	85	6	76 - 124	0 - 20
32173	Se	EPA 7740	70	72	3	76 - 124	0 - 20
32173	Tl	EPA 7841	133	136	2	76 - 124	0 - 20
32173	As	EPA 7060	98	96	2	76 - 124	0 - 20
32177	Ag	EPA 6010	95	95	0	76 - 124	0 - 20
32177	Ba	EPA 6010	90	85	6	76 - 124	0 - 20
32177	Be	EPA 6010	90	85	6	76 - 124	0 - 20
32177	Cd	EPA 6010	80	80	0	76 - 124	0 - 20
32177	Cr	EPA 6010	90	90	0	76 - 124	0 - 20
32177	Cu	EPA 6010	95	90	5	76 - 124	0 - 20
32177	Ni	EPA 6010	80	80	0	76 - 124	0 - 20
32177	Pb	EPA 6010	85	85	0	76 - 124	0 - 20
32177	Sb	EPA 6010	90	90	0	76 - 124	0 - 20
32177	Zn	EPA 6010	85	85	0	76 - 124	0 - 20
32362	Hg	EPA 7470	92	101	9	76 - 124	0 - 20
32413	CN	EPA 9010	96	97	1	75 - 125	0 - 30
32506	CN	EPA 9010	103	106	3	75 - 125	0 - 30

## Post Digestion Spike Information

Batch Number	Analyte	Method	PDS %Rec	%Recovery Range
32160	Se	EPA 7740	128	76 - 124
32160	Tl	EPA 7841	105	76 - 124
32160	As	EPA 7060	75	76 - 124
32163	Ag	EPA 6010	110	76 - 124
32163	Ba	EPA 6010	99	76 - 124
32163	Be	EPA 6010	96	76 - 124
32163	Cd	EPA 6010	97	76 - 124
32163	Cr	EPA 6010	96	76 - 124
32163	Cu	EPA 6010	100	76 - 124
32163	Ni	EPA 6010	93	76 - 124
32163	Pb	EPA 6010	94	76 - 124
32163	Sb	EPA 6010	110	76 - 124
32163	Zn	EPA 6010	91	76 - 124
32173	Se	EPA 7740	56	76 - 124
32173	Tl	EPA 7841	97	76 - 124
32173	As	EPA 7060	82	76 - 124
32177	Ag	EPA 6010	100	76 - 124
32177	Ba	EPA 6010	98	76 - 124
32177	Be	EPA 6010	96	76 - 124
32177	Cd	EPA 6010	90	76 - 124
32177	Cr	EPA 6010	99	76 - 124
32177	Cu	EPA 6010	97	76 - 124

Analytical Services Inc. Batch QC  
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## Post Digestion Spike Information

Batch Number	Analyte	Method	PDS %Rec	%Recovery Range
32177	Ni	EPA 6010	91	76 - 124
32177	Pb	EPA 6010	99	76 - 124
32177	Sb	EPA 6010	100	76 - 124
32177	Zn	EPA 6010	90	76 - 124

## Unspiked Sample Duplicate Information

Batch Number	Analyte	Method	Sample 1 RPD	Sample 2 RPD	RPD Range
32413	CN	EPA 9010	0	0	0 - 30
32506	CN	EPA 9010	0	0	0 - 30

Sample Batch Information  
Analysis : Hg

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
32048BLANK	HG	08/25/97	2022	MB		08/26/97	1200	FBS	HG1
32048LCS	HG	08/25/97	2022	MB		08/26/97	1203	FBS	HG1
32048LCSD	HG	08/25/97	2022	MB		08/26/97	1205	FBS	HG1
86159-4MS	HG	08/25/97	2022	MB		08/26/97	1207	FBS	HG1
86159-4MSD	HG	08/25/97	2022	MB		08/26/97	1210	FBS	HG1
86159-5DUP	HG	08/25/97	2022	MB		08/26/97	1212	FBS	HG1
86126-13	HG	08/25/97	2022	MB		08/26/97	1233	FBS	HG1
86126-14	HG	08/25/97	2022	MB		08/26/97	1236	FBS	HG1
86143	HG	08/25/97	2022	MB		08/26/97	1238	FBS	HG1
86150-1	HG	08/25/97	2022	MB		08/26/97	1241	FBS	HG1
86150-2	HG	08/25/97	2022	MB		08/26/97	1243	FBS	HG1
86159-1	HG	08/25/97	2022	MB		08/26/97	1219	FBS	HG1
86159-2	HG	08/25/97	2022	MB		08/26/97	1221	FBS	HG1
86159-3	HG	08/25/97	2022	MB		08/26/97	1229	FBS	HG1
86159-4	HG	08/25/97	2022	MB		08/26/97	1214	FBS	HG1
86159-5	HG	08/25/97	2022	MB		08/26/97	1217	FBS	HG1
86159-6	HG	08/25/97	2022	MB		08/26/97	1231	FBS	HG1
86161	HG	08/25/97	2022	MB		08/26/97	1245	FBS	HG1
86165	HG	08/25/97	2022	MB		08/26/97	1248	FBS	HG1
86173-2	HG	08/25/97	2022	MB		08/26/97	1250	FBS	HG1
86173-4	HG	08/25/97	2022	MB		08/26/97	1257	FBS	HG1
86173-5	HG	08/25/97	2022	MB		08/26/97	1300	FBS	HG1
86173-6	HG	08/25/97	2022	MB		08/26/97	1302	FBS	HG1
86173-7	HG	08/25/97	2022	MB		08/26/97	1304	FBS	HG1
86173-8	HG	08/25/97	2022	MB		08/26/97	1304	FBS	HG1
86198	HG	08/25/97	2022	MB		08/26/97	1309	FBS	HG1

Sample Batch Information  
Analysis : Se, Tl, As

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
32160BLANK	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
32160LCS	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
32160LCSD	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86126-5MS	Se	08/26/97	0600	MTK	AKA 86126-4	08/28/97	1341	MCW	AA1
86126-17MSD	Se	08/26/97	0600	MTK	AKA 86126-4	08/28/97	1341	MCW	AA1
86126-9PDS	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86126-9DUP	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86126-3	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86126-4	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86126-5	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86126-7	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86126-8	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86126-9	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86150-1	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86150-2	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86173-11	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86173-12	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86173-13	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86173-14	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86173-15	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86173-17	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86173-18	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86173-19	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86173-2	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86173-4	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
86173-5	Se	08/26/97	0600	MTK		08/28/97	1341	MCW	AA1
32160BLANK	Tl	08/26/97	0600	MTK		08/28/97	1626	MCW	AA2
32160LCS	Tl	08/26/97	0600	MTK		08/28/97	1632	MCW	AA2
32160LCSD	Tl	08/26/97	0600	MTK		08/28/97	1639	MCW	AA2
86126-5MS	Tl	08/26/97	0600	MTK	AKA 86126-4	08/28/97	1645	MCW	AA2
86126-17MSD	Tl	08/26/97	0600	MTK	AKA 86126-4	08/28/97	1654	MCW	AA2
86126-9PDS	Tl	08/26/97	0600	MTK		08/28/97	1657	MCW	AA2
86126-9DUP	Tl	08/26/97	0600	MTK		08/28/97	1704	MCW	AA2
86126-3	Tl	08/26/97	0600	MTK		08/28/97	1710	MCW	AA2
86126-4	Tl	08/26/97	0600	MTK		08/28/97	1716	MCW	AA2
86126-5	Tl	08/26/97	0600	MTK		08/28/97	1735	MCW	AA2
86126-7	Tl	08/26/97	0600	MTK		08/28/97	1741	MCW	AA2
86126-8	Tl	08/26/97	0600	MTK		08/28/97	1747	MCW	AA2
86126-9	Tl	08/26/97	0600	MTK		08/28/97	1753	MCW	AA2
86150-1	Tl	08/26/97	0600	MTK		08/28/97	1759	MCW	AA2
86150-2	Tl	08/26/97	0600	MTK		08/28/97	1805	MCW	AA2
86173-11	Tl	08/26/97	0600	MTK		08/28/97	1811	MCW	AA2
86173-12	Tl	08/26/97	0600	MTK		08/28/97	1818	MCW	AA2
86173-13	Tl	08/26/97	0600	MTK		08/28/97	1824	MCW	AA2
86173-14	Tl	08/26/97	0600	MTK		08/28/97	1842	MCW	AA2
86173-15	Tl	08/26/97	0600	MTK		08/28/97	1848	MCW	AA2
86173-17	Tl	08/26/97	0600	MTK		08/28/97	1854	MCW	AA2
86173-18	Tl	08/26/97	0600	MTK		08/28/97	1900	MCW	AA2

Sample Batch Information  
Analysis : Se, Tl, As

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
86173-19	Tl	08/26/97	0600	MTK		08/28/97	1906	MCW	AA2
86173-2	Tl	08/26/97	0600	MTK		08/28/97	1913	MCW	AA2
86173-4	Tl	08/26/97	0600	MTK		08/28/97	1919	MCW	AA2
86173-5	Tl	08/26/97	0600	MTK		08/28/97	1938	MCW	AA2
32160BLANK	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
32160LCS	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
32160LCSD	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86126-5MS	As	08/26/97	0600	MTK	AKA 86126-4	09/02/97	1621	MCW	AA1
86126-17MSD	As	08/26/97	0600	MTK	AKA 86126-4	09/02/97	1621	MCW	AA1
86126-9PDS	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86126-9DUP	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86126-3	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86126-4	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86126-5	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86126-7	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86126-8	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86126-9	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86150-1	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86150-2	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86173-11	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86173-12	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86173-13	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86173-14	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86173-15	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86173-17	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86173-18	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86173-19	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86173-2	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86173-4	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1
86173-5	As	08/26/97	0600	MTK		09/02/97	1621	MCW	AA1

Sample Batch Information  
Analysis : Ag, Ba, Be, Cd, Cr, Cu, Ni, Pb, Sb, Zn

Sample ID	Preparation			Preparation Notes	Analysis			Inst
	Tag	Date	Time By		Date	Time	By	
32163BLANK		08/26/97	0715 CJC	TRACE	08/28/97	1124	MLR	ICP2
32163LCS		08/26/97	0715 CJC	TRACE	08/28/97	1127	MLR	ICP2
32163LCSD		08/26/97	0715 CJC	TRACE	08/28/97	1130	MLR	ICP2
86160-2MS		08/26/97	0715 CJC	TRACE	08/28/97	1133	MLR	ICP2
86160-2MSD		08/26/97	0715 CJC	TRACE	08/28/97	1136	MLR	ICP2
86160-10PDS		08/26/97	0715 CJC	TRACE	08/28/97	1139	MLR	ICP2
86160-10DUP		08/26/97	0715 CJC	TRACE	08/28/97	1142	MLR	ICP2
86160-10		08/26/97	0715 CJC	TRACE	08/28/97	1148	MLR	ICP2
86160-11		08/26/97	0715 CJC	TRACE	08/28/97	1151	MLR	ICP2
86160-12		08/26/97	0715 CJC	TRACE	08/28/97	1200	MLR	ICP2
86160-13		08/26/97	0715 CJC	TRACE	08/28/97	1202	MLR	ICP2
86160-14		08/26/97	0715 CJC	TRACE	08/28/97	1205	MLR	ICP2
86160-15		08/26/97	0715 CJC	TRACE	08/28/97	1208	MLR	ICP2
86160-16		08/26/97	0715 CJC	TRACE	08/28/97	1211	MLR	ICP2
86160-17		08/26/97	0715 CJC	TRACE	08/28/97	1214	MLR	ICP2
86160-18		08/26/97	0715 CJC	TRACE	08/28/97	1217	MLR	ICP2
86160-2		08/26/97	0715 CJC	TRACE	08/28/97	1145	MLR	ICP2
86160-3		08/26/97	0715 CJC	TRACE	08/28/97	1220	MLR	ICP2
86160-4		08/26/97	0715 CJC	TRACE	08/28/97	1223	MLR	ICP2
86160-5		08/26/97	0715 CJC	TRACE	08/28/97	1226	MLR	ICP2
86160-6		08/26/97	0715 CJC	TRACE	08/28/97	1235	MLR	ICP2
86160-7		08/26/97	0715 CJC	TRACE	08/28/97	1238	MLR	ICP2
86160-8		08/26/97	0715 CJC	TRACE	08/28/97	1241	MLR	ICP2
86160-9		08/26/97	0715 CJC	TRACE	08/28/97	1244	MLR	ICP2
86173-11		08/26/97	0715 CJC	TRACE	08/28/97	1247	MLR	ICP2
86173-12		08/26/97	0715 CJC	TRACE	08/28/97	1250	MLR	ICP2
86173-13		08/26/97	0715 CJC	TRACE	08/28/97	1253	MLR	ICP2



Sample Batch Information  
Analysis : Se, Tl, As

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
32173BLANK	Se	08/28/97	0525	CJC/MTK		08/28/97	1728	MCW	AA1
32173LCS	Se	08/28/97	0525	CJC/MTK		08/28/97	1728	MCW	AA1
32173LCSD	Se	08/28/97	0525	CJC/MTK		08/28/97	1728	MCW	AA1
86173-16MS	Se	08/28/97	0525	CJC/MTKAKA	86173-15	08/28/97	1728	MCW	AA1
86173-22MSD	Se	08/28/97	0525	CJC/MTKAKA	86173-15	08/28/97	1728	MCW	AA1
86173-6PDS	Se	08/28/97	0525	CJC/MTK		08/28/97	1728	MCW	AA1
86173-7DUP	Se	08/28/97	0525	CJC/MTK		08/28/97	1728	MCW	AA1
86173-16	Se	08/28/97	0525	CJC/MTK		08/28/97	1728	MCW	AA1
86173-6	Se	08/28/97	0525	CJC/MTK		08/28/97	1728	MCW	AA1
86173-7	Se	08/28/97	0525	CJC/MTK		08/28/97	1728	MCW	AA1
86173-8	Se	08/28/97	0525	CJC/MTK		08/28/97	1728	MCW	AA1
86173-9	Se	08/28/97	0525	CJC/MTK		08/28/97	1728	MCW	AA1
86175-1	Se	08/28/97	0525	CJC/MTK		08/28/97	1728	MCW	AA1
86342-11	Se	08/28/97	0525	CJC/MTK		08/28/97	1728	MCW	AA1
86342-13	Se	08/28/97	0525	CJC/MTK		08/28/97	1728	MCW	AA1
86342-5	Se	08/28/97	0525	CJC/MTK		08/28/97	1728	MCW	AA1
86342-7	Se	08/28/97	0525	CJC/MTK		08/28/97	1728	MCW	AA1
86342-9	Se	08/28/97	0525	CJC/MTK		08/28/97	1728	MCW	AA1
LCDI	Se	08/28/97	0525	CJC/MTK		08/28/97	1728	MCW	AA1
LCDI	Se	08/28/97	0525	CJC/MTK		08/28/97	1728	MCW	AA1
32173BLANK	Tl	08/28/97	0525	CJC/MTK		08/29/97	0850	MCW	AA2
32173LCS	Tl	08/28/97	0525	CJC/MTK		08/29/97	0856	MCW	AA2
32173LCSD	Tl	08/28/97	0525	CJC/MTK		08/29/97	0902	MCW	AA2
86173-16MS	Tl	08/28/97	0525	CJC/MTKAKA	86173-15	08/29/97	0908	MCW	AA2
86173-22MSD	Tl	08/28/97	0525	CJC/MTKAKA	86173-15	08/29/97	0915	MCW	AA2
86173-6PDS	Tl	08/28/97	0525	CJC/MTK		08/29/97	0921	MCW	AA2
86173-7DUP	Tl	08/28/97	0525	CJC/MTK		08/29/97	0927	MCW	AA2
86173-16	Tl	08/28/97	0525	CJC/MTK		08/29/97	0933	MCW	AA2
86173-6	Tl	08/28/97	0525	CJC/MTK		08/29/97	0939	MCW	AA2
86173-7	Tl	08/28/97	0525	CJC/MTK		08/29/97	0958	MCW	AA2
86173-8	Tl	08/28/97	0525	CJC/MTK		08/29/97	1004	MCW	AA2
86173-9	Tl	08/28/97	0525	CJC/MTK		08/29/97	1010	MCW	AA2
86175-1	Tl	08/28/97	0525	CJC/MTK		08/29/97	1017	MCW	AA2
86342-11	Tl	08/28/97	0525	CJC/MTK		08/29/97	1023	MCW	AA2
86342-13	Tl	08/28/97	0525	CJC/MTK		08/29/97	1029	MCW	AA2
86342-5	Tl	08/28/97	0525	CJC/MTK		08/29/97	1035	MCW	AA2
86342-7	Tl	08/28/97	0525	CJC/MTK		08/29/97	1041	MCW	AA2
86342-9	Tl	08/28/97	0525	CJC/MTK		08/29/97	1047	MCW	AA2
32173BLANK	As	08/28/97	0525	CJC/MTK		09/04/97	0838	MCW	AA1
32173LCS	As	08/28/97	0525	CJC/MTK		09/04/97	0838	MCW	AA1
32173LCSD	As	08/28/97	0525	CJC/MTK		09/04/97	0838	MCW	AA1
86173-16MS	As	08/28/97	0525	CJC/MTKAKA	86173-15	09/04/97	0838	MCW	AA1
86173-22MSD	As	08/28/97	0525	CJC/MTKAKA	86173-15	09/04/97	0838	MCW	AA1
86173-6PDS	As	08/28/97	0525	CJC/MTK		09/04/97	0838	MCW	AA1
86173-7DUP	As	08/28/97	0525	CJC/MTK		09/04/97	0838	MCW	AA1
86173-16	As	08/28/97	0525	CJC/MTK		09/04/97	0838	MCW	AA1
86173-6	As	08/28/97	0525	CJC/MTK		09/04/97	0838	MCW	AA1
86173-7	As	08/28/97	0525	CJC/MTK		09/04/97	0838	MCW	AA1

Sample Batch Information  
Analysis : Se, Tl, As

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
86173-8	As	08/28/97	0525	CJC/MTK		09/04/97	0838	MCW	AA1
86173-9	As	08/28/97	0525	CJC/MTK		09/04/97	0838	MCW	AA1
86175-1	As	08/28/97	0525	CJC/MTK		09/04/97	0838	MCW	AA1
86342-11	As	08/28/97	0525	CJC/MTK		09/04/97	0838	MCW	AA1
86342-13	As	08/28/97	0525	CJC/MTK		09/04/97	0838	MCW	AA1
86342-5	As	08/28/97	0525	CJC/MTK		09/04/97	0838	MCW	AA1
86342-7	As	08/28/97	0525	CJC/MTK		09/04/97	0838	MCW	AA1
86342-9	As	08/28/97	0525	CJC/MTK		09/04/97	0838	MCW	AA1
LCDI	As	08/28/97	0525	CJC/MTK		09/04/97	0838	MCW	AA1
LCDI	As	08/28/97	0525	CJC/MTK		09/04/97	0838	MCW	AA1

Sample Batch Information  
Analysis : Ag, Ba, Be, Cd, Cr, Cu, Ni, Pb, Sb, Zn

Sample ID	Preparation			Preparation Notes	Analysis			Inst
	Tag	Date	Time By		Date	Time	By	
32177BLANK		08/28/97	0630 CJC	TRACE	08/29/97	1916	MAB	ICP2
32177LCS		08/28/97	0630 CJC	TRACE	08/29/97	1918	MAB	ICP2
32177LCSD		08/28/97	0630 CJC	TRACE	08/29/97	1921	MAB	ICP2
86173-16MS		08/28/97	0630 CJC	AKA 86173-15	08/29/97	1924	MAB	ICP2
86173-22MSD		08/28/97	0630 CJC	AKA 86173-15	08/29/97	1927	MAB	ICP2
86173-2PDS		08/28/97	0630 CJC	TRACE	08/29/97	1930	MAB	ICP2
86173-4DUP		08/28/97	0630 CJC	TRACE	08/29/97	1933	MAB	ICP2
86173-14		08/28/97	0630 CJC	TRACE	08/29/97	2006	MAB	ICP2
86173-15		08/28/97	0630 CJC	TRACE	08/29/97	2009	MAB	ICP2
86173-16		08/28/97	0630 CJC	TRACE	08/29/97	1936	MAB	ICP2
86173-17		08/28/97	0630 CJC	TRACE	08/29/97	2012	MAB	ICP2
86173-18		08/28/97	0630 CJC	TRACE	08/29/97	2015	MAB	ICP2
86173-19		08/28/97	0630 CJC	TRACE	08/29/97	2018	MAB	ICP2
86173-2		08/28/97	0630 CJC	TRACE	08/29/97	1939	MAB	ICP2
86173-4		08/28/97	0630 CJC	TRACE	08/29/97	1942	MAB	ICP2
86173-5		08/28/97	0630 CJC	TRACE	08/29/97	1951	MAB	ICP2
86173-6		08/28/97	0630 CJC	TRACE	08/29/97	1954	MAB	ICP2
86173-7		08/28/97	0630 CJC	TRACE	08/29/97	1957	MAB	ICP2
86173-8		08/28/97	0630 CJC	TRACE	08/29/97	2000	MAB	ICP2
86173-9		08/28/97	0630 CJC	TRACE	08/29/97	2003	MAB	ICF

Sample Batch Information  
Analysis : Hg

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
32362BLANK	HG	08/26/97	2030	MB		08/27/97	1102	FBS	HG1
32362LCS	HG	08/26/97	2030	MB		08/27/97	1104	FBS	HG1
32362LCSD	HG	08/26/97	2030	MB		08/27/97	1106	FBS	HG1
86173-16MS	HG	08/26/97	2030	MB	AKA 86173-15	08/27/97	1109	FBS	HG1
86173-22MSD	HG	08/26/97	2030	MB	AKA 86173-15	08/27/97	1111	FBS	HG1
86173-9DUP	HG	08/26/97	2030	MB		08/27/97	1113	FBS	HG1
86242-1	HG	08/26/97	2030	MB		08/27/97	1213	FBS	HG1
86242-2	HG	08/26/97	2030	MB		08/27/97	1215	FBS	HG1
86173-9	HG	08/26/97	2030	MB		08/27/97	1116	FBS	HG1
86173-11	HG	08/26/97	2030	MB		08/27/97	1121	FBS	HG1
86173-12	HG	08/26/97	2030	MB		08/27/97	1128	FBS	HG1
86173-13	HG	08/26/97	2030	MB		08/27/97	1130	FBS	HG1
86173-14	HG	08/26/97	2030	MB		08/27/97	1133	FBS	HG1
86173-15	HG	08/26/97	2030	MB	AKA 86173-16	08/27/97	1135	FBS	HG1
86173-16	HG	08/26/97	2030	MB	AKA 86173-15	08/27/97	1118	FBS	HG1
86173-17	HG	08/26/97	2030	MB		08/27/97	1137	FBS	HG1
86173-18	HG	08/26/97	2030	MB		08/27/97	1140	FBS	HG1
86173-19	HG	08/26/97	2030	MB		08/27/97	1142	FBS	HG1
86 5-1	HG	08/26/97	2030	MB		08/27/97	1144	FBS	HG1
86 9-1	HG	08/26/97	2030	MB		08/27/97	1147	FBS	HG1
86262-3	HG	08/26/97	2030	MB		08/27/97	1149	FBS	HG1
86240-1	HG	08/26/97	2030	MB		08/27/97	1156	FBS	HG1
86261-1	HG	08/26/97	2030	MB		08/27/97	1200	FBS	HG1
86261-2	HG	08/26/97	2030	MB		08/27/97	1202	FBS	HG1
86261-3	HG	08/26/97	2030	MB		08/27/97	1205	FBS	HG1
86261-4	HG	08/26/97	2030	MB		08/27/97	1207	FBS	HG1

Sample Batch Information  
Analysis : CN

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
32413BLK		08/26/97	0835	ARS	MIDI-DIST	08/26/97	1140	ARS	GENE5
32413LCS		08/26/97	0835	ARS	MIDI-DIST	08/26/97	1140	ARS	GENE5
32413LCSD		08/26/97	0835	ARS	MIDI-DIST	08/26/97	1140	ARS	GENE5
86126-4MS		08/26/97	0835	ARS	AKA 86126-5D	08/26/97	1140	ARS	GENE5
86126-4MSD		08/26/97	0835	ARS	AKA 86126-5D	08/26/97	1140	ARS	GENE5
86126-1		08/26/97	0835	ARS	MIDI-DIST	08/26/97	1140	ARS	GENE5
86126-2		08/26/97	0835	ARS	MIDI-DIST	08/26/97	1140	ARS	GENE5
86126-3		08/26/97	0835	ARS	MIDI-DIST	08/26/97	1140	ARS	GENE5
86126-4		08/26/97	0835	ARS	MIDI-DIST	08/26/97	1140	ARS	GENE5
86126-7		08/26/97	0835	ARS	MIDI-DIST	08/26/97	1140	ARS	GENE5
86126-8		08/26/97	1100	ARS	MIDI-DIST	08/26/97	1410	ARS	GENE5
32413CAL5		08/26/97	1100	ARS	MIDI-DIST	08/26/97	1410	ARS	GENE5
32413CAL15		08/26/97	1100	ARS	MIDI-DIST	08/26/97	1410	ARS	GENE5
86126-9		08/26/97	1100	ARS	MIDI-DIST	08/26/97	1410	ARS	GENE5
86126-11		08/26/97	1100	ARS	MIDI-DIST	08/26/97	1410	ARS	GENE5
86126-12		08/26/97	1100	ARS	MIDI-DIST	08/26/97	1410	ARS	GENE5
86126-13		08/26/97	1100	ARS	MIDI-DIST	08/26/97	1410	ARS	GENE5
86126-14		08/26/97	1100	ARS	MIDI-DIST	08/26/97	1410	ARS	GENE5
86173-1		08/26/97	1100	ARS	MIDI-DIST	08/26/97	1410	ARS	GENE5
86173-2		08/26/97	1100	ARS	MIDI-DIST	08/26/97	1410	ARS	GENE5
86173-4		08/26/97	1310	ARS	MIDI-DIST	08/26/97	1620	ARS	GENE5
86173-4DUP		08/26/97	1310	ARS	MIDI-DIST	08/26/97	1620	ARS	GENE5
86173-5		08/26/97	1310	ARS	MIDI-DIST	08/26/97	1620	ARS	GENE5
86173-5DUP		08/26/97	1310	ARS	MIDI-DIST	08/26/97	1620	ARS	GENE5
86173-6		08/26/97	1310	ARS	MIDI-DIST	08/26/97	1620	ARS	GENE5
86173-7		08/26/97	1310	ARS	MIDI-DIST	08/26/97	1620	ARS	GENE5
86173-8		08/26/97	1310	ARS	MIDI-DIST	08/26/97	1620	ARS	GENE5
86173-9		08/26/97	1310	ARS	MIDI-DIST	08/26/97	1620	ARS	GENE5
86173-11		08/26/97	1310	ARS	MIDI-DIST	08/26/97	1620	ARS	GENE5

Sample Batch Information  
Analysis : CN

Sample ID	Tag	Preparation			Preparation Notes	Analysis			Inst
		Date	Time	By		Date	Time	By	
32506BLK		09/02/97	0800	ARS	MIDI-DIST	09/02/97	1040	ARS	GENE5
32506LCS		09/02/97	0800	ARS	MIDI-DIST	09/02/97	1040	ARS	GENE5
32506LCSD		09/02/97	0800	ARS	MIDI-DIST	09/02/97	1040	ARS	GENE5
86173-15MS		09/02/97	0800	ARS	AKA 86173-16	A09/02/97	1040	ARS	GENE5
86173-15MSD		09/02/97	0800	ARS	AKA 86173-16	A09/02/97	1040	ARS	GENE5
86173-12		09/02/97	0800	ARS	MIDI-DIST	09/02/97	1040	ARS	GENE5
86173-13		09/02/97	0800	ARS	MIDI-DIST	09/02/97	1040	ARS	GENE5
86173-14		09/02/97	0800	ARS	MIDI-DIST	09/02/97	1040	ARS	GENE5
86173-15		09/02/97	0800	ARS	MIDI-DIST	09/02/97	1040	ARS	GENE5
86173-17		09/02/97	0800	ARS	MIDI-DIST	09/02/97	1040	ARS	GENE5
86235-1		09/02/97	1005	ARS	MIDI-DIST	09/02/97	1240	ARS	GENE5
32506CAL5		09/02/97	1005	ARS	MIDI-DIST	09/02/97	1240	ARS	GENE5
32506CAL15		09/02/97	1005	ARS	MIDI-DIST	09/02/97	1240	ARS	GENE5
86235-2		09/02/97	1005	ARS	MIDI-DIST	09/02/97	1240	ARS	GENE5
86235-4		09/02/97	1005	ARS	MIDI-DIST	09/02/97	1240	ARS	GENE5
86235-5		09/02/97	1005	ARS	MIDI-DIST	09/02/97	1240	ARS	GENE5
86235-7		09/02/97	1005	ARS	MIDI-DIST	09/02/97	1240	ARS	GENE5
86235-9		09/02/97	1005	ARS	MIDI-DIST	09/02/97	1240	ARS	GENE5
86235-10		09/02/97	1005	ARS	MIDI-DIST	09/02/97	1240	ARS	GENE5
86235-11		09/02/97	1005	ARS	MIDI-DIST	09/02/97	1240	ARS	GENE5
86173-18		09/02/97	1210	ARS	MIDI-DIST	09/02/97	1425	ARS	GENE5
86173-18DUP		09/02/97	1210	ARS	MIDI-DIST	09/02/97	1425	ARS	GENE5
86173-19		09/02/97	1210	ARS	MIDI-DIST	09/02/97	1425	ARS	GENE5
86173-19DUP		09/02/97	1210	ARS	MIDI-DIST	09/02/97	1425	ARS	GENE5

Project Number TF0320.015

Project Location Gloss Industries

Laboratory ASI

Sampler(s)/Affiliation DP : J14

Gim

Date/Time

SAMPLE IDENTITY	Code	Sampled	Lab ID
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SAMPLE BOTTLE / CONTAINER DESCRIPTION

1 L Amber glass,  
500 mL glass vial,  
40 mL glass vial,  
VOC (9260) 1 L plastic square  
Glycine (9010) NaOH  
500 mL glass w/m  
Mecury (7480)  $\text{HNO}_3$   
500 mL Plastic w/m  
PPM: Ba (6010)  $\text{HNO}_3$

TOTAL

[illegible]

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/  
Containers

34

Relinquished by: <u>[Signature]</u>	Organization: <u>G2M (TAMPA)</u>	Date: <u>8/21/97</u> Time: <u>1:30</u>	Seal Intact?
Received by: <u>W. J. [Signature]</u>	Organization: <u>ASI</u>	Date: <u>8/21/97</u> Time: <u>1:45</u>	Yes No N/A
Relinquished by: <u>[Signature]</u>	Organization: _____	Date: <u>1/1</u> Time: _____	Seal Intact?
Received by: <u>[Signature]</u>	Organization: <u>ASI</u>	Date: <u>8/22/97</u> Time: <u>08:00</u>	<u>Yes</u> No N/A

Special Instructions/Remarks: \* COULD NOT GET BUBBLES FROM VOC VIAL DUE TO CHAM GET W/ H<sub>2</sub>O & HCl

DIRECT ANY/ALL QUESTIONS TO KATHY THAMMAYAT 8139611921

AS COOLER #407

① CONFIRM W/ PETROF. P PRIOR TO ANALYSIS

ice, temp = 2C, pH = 1 (metals)  
Other 12(CN)

Delivery method:

☐ In Person☐ Common Carrier

☒ Lab Courier

☐ Other

1

Project Number TF0320.015  
Project Location Swiss-B'ham, AL  
Laboratory ASI  
Sampler(s)/Affiliation DAVID PAGE / GSI  
J. HUGHES

				SAMPLE BOTTLE / CONTAINER DESCRIPTION								TOTAL	
SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	EPA 8260 AQUA GLASS VIAL 14C1	EPA 8270 LITER AMBER GLASS	PTT+B9 500ML PLASTIC HNO <sub>3</sub>	1-1/2 500ML GLASS HNO <sub>3</sub>	CHANGE LITER PLASTIC NaOH					
7081 -LD-38-GW0030	L	8/21/97 1400		3	2	1	1	1				8	9
7082 -LD-38-TB0005	L	8/21/97 1250		3								3	10
7081 -LD-38-GW0037	L	8/21/97 910		3								3	11
7081 -LD-39-GW0035	L	8/21/97 1530		3								3	12
7082 -LD-39-GW0031	L	8/21/97 030		3								3	13
7082 -LD-39-GW0032	L	8/21/97 1145		3								3	14
7081 -LD-38-GW0030S	L	8/21/97 1330		3								3	15
7082 -LD-38-GW0030S	L	8/21/97 1330		3	2	1	1	1				8	16
7082 -LD-38-GW0030D	L	8/21/97 1500		3								3	17
7082 -LD-39-GW0034D	L	8/21/97 1715		3								3	18
7082 -LD-39-GW0024	L	8/21/97 1750*		3									19

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/  
Containers

40

Relinquished by: <u>[Signature]</u>	Organization: <u>GSI (TAMPA)</u>	Date: <u>8/21/97</u>	Time: <u>1855</u>	Seal Intact?
Received by: <u>[Signature]</u>	Organization: <u>ASI</u>	Date: <u>8/21/97</u>	Time: <u>1855</u>	Yes No N/A
Relinquished by: <u>[Signature]</u>	Organization: <u>ASI</u>	Date: <u>1/1</u>	Time: <u></u>	Seal Intact?
Received by: <u>[Signature]</u>	Organization: <u>ASI</u>	Date: <u>8/22/97</u>	Time: <u>0800</u>	Yes No N/A

Special Instructions/Remarks: \* CONFIRM ANALYSIS W/ PEDRO & PRIOR TO ANALYSIS

DIRECT ANY/ALL QUESTIONS TO KATHY THALMAN AT 813 9611921

ice, temp = 20, pH = 11 (metals)  
12 (CN)

Delivery Method:

☐ In Person

☐ Common Carrier

☒ Lab Courier

☐ Other

SPECIFY

10-26-00-27





Project Number 1F0320.015

Project Location Scoss-B'ham AL

Laboratory As1

Sampler(s)/Affiliation J. HUGHES / ESM  
D. PAGE

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID
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SAMPLE BOTTLE / CONTAINER DESCRIPTION

TOTAL

[illegible]

Sample Code:    L = Liquid;    S = Solid;    A = Air

Total No. of Bottles/  
Containers

10

Relinquished by: <u>[Signature]</u>	Organization: <u>G3M (TAMPA)</u>	Date: <u>8/24/97</u>	Time: <u>1700</u>	Seal Intact?
Received by: <u>[Signature]</u>	Organization: <u>ASB</u>	Date: <u>8/21/97</u>	Time: <u>1900 hrs</u>	Yes No N/A
Relinquished by: <u>[Signature]</u>	Organization: _____	Date: <u>1/1</u>	Time: _____	Seal Intact?
Received by: <u>[Signature]</u>	Organization: <u>ASI</u>	Date: <u>8/22/97</u>	Time: <u>0800</u>	<u>Yes</u> No N/A

Special Instructions/Remarks:

DIRECT ANY/ALL QUESTIONS TO KATHY TETLMAN AT 813 961/92/ ice, temp = 2C pH = 9.6 <sup>TRW</sup>  
Asi COOLER #77 1 (metals)  
2 (CN)

Delivery Method: ☐ In Person

☐ Common Carrier☒ Lab Courier☐ Other

**SPECIFY**

**SPECIFY**

AG 05-0597





Laboratory Task Order No. 17448

Project Number TF0320.015

Project Location Sloss-B'ham, AL

Laboratory As1

Sampler(s)/Affiliation J. HUGHES / G3 PI  
D. PAGE

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID
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SAMPLE BOTTLE / CONTAINER DESCRIPTION

TOTAL

- 47-38-GW00308 L 8/21/97 1330

-49-38 Gwoozop L 2/2/92 1520

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/  
Containers

15

Relinquished by: <u>[Signature]</u>	Organization: <u>GIM (RAMPA)</u>	Date: <u>8/21/97</u>	Time: <u>1900</u>	Seal Intact?
Received by: <u>Wan Jones</u>	Organization: <u>ASI</u>	Date: <u>8/21/97</u>	Time: <u>1900</u>	Yes No N/A

Relinquished by: _____	Organization: _____	Date: <u>1</u> / <u>1</u> / _____	Time: _____	Seal Intact? _____
Received by: <u>Michael L. Wardell</u>	Organization: <u>AST</u>	Date: <u>8</u> / <u>22</u> / <u>97</u>	Time: <u>0800</u>	(Yes) No N/A

Special Instructions/Remarks:

DIRECT ANY/ALL QUESTIONS TO KATHY TRALMAN AT 813 961 1921 ice, temp = 2C, pH = 1 (metals)  
AS1 COOLER # 404 12(CN)

Delivery Method: ☐ In Person ☐ Common Carrier ☒ Lab Courier ☐ Other

IFY  
AC 25 260

I, James W. Thomas, am responsible for filing documents in the  
(Name of file) SLUSS IND, B' HAM file. The attached document,  
(Name of document) RFI LAND DISPOSAL AREAS, VOL III  
was originally submitted to the Alabama Department of Environmental  
Management in a 3-ring binder.

For ease of filing, only the binder has changed. No material has changed in the  
document. No other alterations have been made to said document, and it is  
otherwise in its original form as submitted to the Alabama Department of  
Environmental Management.

James W. Thomas

Done this 9th of Feb, 1999.

Witness:

Edwin J. [Signature]